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REMOVAL OF THE JUGULAR VEIN.

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I WAS was called on March last to see a filly, the property of a gentleman residing about six miles from my place. To use the expression of the groom when telling me of the accident, "there was a large tear on the right side of the neck, with the skin and flesh hanging down over the face." The call came in early in the morning, but owing to pressure of business I could not attend until late that night. When I arrived I found the animal, a valuable two-year-old thorough-bred filly, placed in a large loose box. She was extremely wild and nervous; after much trouble a couple of grooms and the owner managed to put on a cavesson, and subsequently applied a twitch.

It was, no doubt, a nasty wound to look at, as all the skin, together with the superficial muscular tissue, had been removed from the anterior border of the scapula to within two or three inches of the root of the right ear, and was left hanging down over the face, leaving exposed to view the transverse processes of the vertebræ and the jugular vein. On closer examination, I found the outer coat of the latter had suffered injury, and this, of course, made matters much more serious than otherwise they would have been had the vein remained uninjured. I now cleansed the wound, removing all foreign matters, and with the hopeless end in view of getting the almost detached skin and muscle to adhere to the exposed surface, I clipped the hair from the edges of the wound, at the same time removing loose and ragged tissue. I next replaced the skin, with the muscles attached to it, and applied sutures, dressed the whole antiseptically, put on a

bandage around the neck, and had administered an anti-phlogistic mixture internally every six hours. The food was to consist of mashes and small quantities of hay.

On my second visit I found the filly refusing food and very feverish; fæces hard and coated; the wound looking bad, and surrounding parts very much swollen and painful. I ordered fomentations to be resorted to every six hours, and the wound to be dressed antiseptically after each fomentation. I administered twelve ounces of mag. sulph. for the double purpose of acting as a febrifuge and laxative. The anti-phlogistic mixture I prescribed on my first visit I continued to use while there remained any trace of fever present.

When I next visited the filly, I found the stitches had given way, and the whole of the former detached mass hung down when the attendant removed the bandages. I now came to the conclusion that to get this to unite was beyond my power, and I consequently removed the whole by cutting across the muscles and skin at their attached end, about two inches from the root of the ear. The entire side of the neck was now destitute of skin, and the greater part of it also of muscular tissue, leaving bare the transverse processes of several of the cervical vertebræ. I ordered the same treatment to be continued. When I next saw the animal, her general health I could not complain of, but the jugular vein looked anything but favourable; in two different parts of the outer coat ulceration was going on, and the vessel was also very much swollen and painful to the touch. As it was late at night and I had no instruments with me, I decided on not interfering surgically. I placed some extra pads over the vein to try and relieve the pressure on the wall and replaced the bandages after the usual dressing. I explained to the owner the danger the animal was in, and advised him to place one of his grooms in the box, with instructions that if the vein did rupture, to take hold of it with his finger and thumb.

Next morning I was aroused by loud rapping; a messenger had come from my client to say the vein had burst, and before the bandages could be removed the animal had lost about two quarts of blood. I questioned the man if the groom had done what I told him with regard to taking hold of the vein, and he answered in the affirmative, which relieved my mind greatly. Six miles from the bleeding filly was a long distance, but a fast horse took but short time to get over it.

On my arrival I found the owner holding on the vein, while a groom stood by her head, and managed by alternate threats and endearing expressions to keep her quiet. To do anything

in the way of a surgical operation while the filly was on her legs was impossible. On a thick bed of straw I had her laid down, and then proceeded to make an examination of the vein. I found it had ruptured in two places, and for many inches of its course the wall was gangrenous.

At the upper end of the jugular there remained about two inches of muscle which had not been torn away; this I removed close to where the glosso-facial vein joins the jugular. I then put on a catgut ligature at this point, and another at the other end and removed that part of the vein situated between the two ligatures. When this was done I dressed the whole surface antiseptically, and applied a pad of tow, previously saturated with antiseptic lotion, over the upper ligature to relieve pressure and thus make matters more secure; the former bandages were put on, and the animal was allowed to rise. She appeared exceedingly dull, and partly unconscious of our presence in the box. She refused everything in the shape of food, with the exception of a couple of quarts of sweet milk, into which I poured half a pint of whiskey; this seemed to revive her a little, and after a few hours she partook of some boiled roots. She remained in this dull and sleepy condition for about a week, when she gradually grew livelier as the collateral circulation became established. Owing to the excessive discharge, the wound had to be dressed three, and sometimes four times a day; at the same time I ordered the neck to be bathed for half an hour each time. For about five days matters went on fairly well, but at the end of that period a hard painful swelling appeared on the opposite side of the neck, immediately behind the left ear. This I ordered to be fomented, and after about three days I lanced it and allowed a quantity of offensive pus to escape. In a short time afterwards, an abscess formed in the intermaxillary space and another on the face. This time matters looked serious; the animal went off her food (which consisted of mashes and milk); the temperature went up; she lost condition, the coat was staring, and on the slightest draught of wind entering the box she would immediately commence shivering, notwithstanding the heavy clothing she wore. I apprehended the worst, as I suspected that pyæmia had set in. I treated her accordingly, the abscesses were lanced and antiseptically dressed, while I had administered potass. chlorass., sodii hyposulph., mist. tonica conc., as well as eggs, milk, gruels, mashes, roots—in short, kept the diet varying as much as possible. The surroundings were made comfortable and clean. After about

eight days matters commenced to improve a little; the appetite was better, the temperature went down and remained steady, and the abscesses commenced to show signs of health and healing. In about a fortnight the animal began to put on condition, and took everything offered her. When I last visited her, all that remained of the once formidable wound the palm of the hand would cover. Some time afterwards the owner wrote to inform me he had turned the filly out to grass, and she was doing well.

A NEW SURGICAL METHOD OF TREATING VENTRAL, AND PARTICULARLY UMBILICAL, HERNIÆ IN THE DOMESTIC ANIMALS.*

BY PROFESSOR DEGIVE, DIRECTOR OF THE BRUSSELS VETERINARY SCHOOL.

I THINK it will be useful to make known to the Academy a method of operating which is, I believe, novel, and is superior to all the procedures known for the treatment of ventral and umbilical herniæ, and even for eventrations, in the domestic animals.

A fortuitous circumstance led me to devise this method of operating. An eighteen-months'-old foal was brought last July to the Veterinary School to be operated upon for an umbilical hernia that had been already treated in the usual manner—mortification of the sac by means of a wooden clam—but without result. The clam had certainly caused the removal of the sac, but seeing the excessive dimensions of the ring this had only palliated the evil.

The tumour was not very prominent, and, elongated in a longitudinal direction, it was the size of two fists. In reducing it, the hand experienced, through the very large ring, the resistance offered by the deeper layer of the thickened hernial sac, which only allowed a relatively limited reduction to be effected.

The owner of the animal being desirous of having a radical cure made of this hernia, my prognosis had to be given with considerable reserve, and I only saw one means that offered a chance of obtaining the wished-for result—to apply sutures through the margin of the hernial ring, which should be previously made raw. But the great dimensions of the opening—ten centimetres in length by six centimetres in width—caused me some apprehensions as to the success of such an operation, though I nevertheless made up my mind to try it.

* A communication made to the Royal Academy of Medicine of Belgium.

The animal having been laid down and placed on its back, *and the region to be operated upon having been shaved and carefully disinfected*, I made an incision in the median line, in the posterior part of the sac, and sufficiently long to allow me to pass the index finger through it. I was thus enabled to arrive at a correct notion of the state of the parts, and to recognise that the sac, which was very much thickened, was free from adhesion with any of the abdominal organs. While making this exploration, and more especially in feeling the margin of the ring, I asked myself if there could not be a more simple and certain means of closing the opening than passing sutures through the abraded edges; and it was while so reflecting that, all at once, the idea arose of passing two pins through the skin and the hernial ring, so as to serve as a hold for the jaws of a hernia clam similar to that usually employed for large animals, and intended to bring the lips together by their inner surface. We may, in tightening the clam by the screw at each end of it, obtain apposition, strangulation, and eversion of the borders of the ring, so as to certainly bring about mortification of the sac.

Not having appropriate pins, I had recourse to two middle-size packing-needles. A finger passed into the sac served to mask the point of the needle and prevent injury to the intestine while it was being placed. The two needles having been implanted, the clam was applied with the greatest facility, and tightened until the two sides were within eight millimetres of each other—a distance which appeared to me to be sufficient to cause mortification and dropping off of the hernial pouch, as well as setting up adhesive inflammation, thus leading to obliteration of the ring.

In order to prevent displacement of the clam on the needles being withdrawn, I immediately passed below it six small horse-shoe nails through the skin and the lips of the hernial ring, bending over these points with a pair of pliers *ad hoc*.

At the end of eight days the clam fell off, and along with it the tissues in its grasp. The ring was closed, and there only remained a wound, the edges of which were close together and the tissues so retracted that there was merely a very small cicatrix that was barely perceptible.

Two months afterwards I was called into consultation with two colleagues on an almost identical case to the above. This was a young thoroughbred horse which had been unsuccessfully operated upon by the application of a wooden

clam. As in the other animal, the hernial ring in this one was long and wide, and the sac was so thickened that it allowed only very slight reduction.

This ring, it appeared, could only be closed by direct suture, but from the experience of the former case, and its happy termination, I was able to give a favourable prognosis.

The animal having been anæstheticised, the operation was performed in the same manner as in the preceding case, and with an equally satisfactory result. At the end of eight days, all the tissues compressed by the clam had sloughed off, and cicatrisation took place regularly and radically; so that, finally, there was no trace of hernia or umbilical ring.

It will be readily understood that this operative procedure may be successfully adopted in all cases of umbilical hernia, as well as in those of ventral hernia occupying the inferior parts of the abdomen of animals. In the superior parts it is not necessary to employ such a complex apparatus, as the tension is not so great. But in the lower regions of the abdomen, it is essential to employ apparatus of sufficient strength and absolute fixity. That which I used would appear to answer perfectly for all recent or chronic herniæ, and even for eventrations. When the opening is small a single pin will suffice, and it will be rarely the case that the opening will be so large as to require more than two.

In order to diminish the weight of the apparatus, I have devised a clam, the branches of which are 20 centimetres long (nearly eight inches), 16 millimetres broad (about five-eighths of an inch), and 8 millimetres thick (about five-sixteenths of an inch). These are made of wood, the edge being a thin plate of iron. This clam, of moderate dimensions, appears to me to realise all the conditions necessary for application in the majority of cases of herniæ, whether they be of small, medium, or voluminous size.

In cases of eventration, the steel pins may be passed through the lips of the wound, and the clam applied above them; then when the pins are withdrawn, they can be replaced by small nails. In this way there is realised a means of radical fixation and retention, affording complete security until cicatrisation is established—a condition that is difficult to obtain with the best devised sutures.

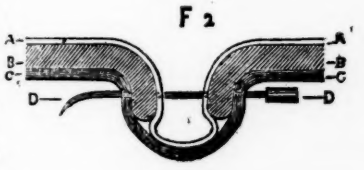
In order to sustain the clam until the compressed tissues are divided, a piece of tape or string is fastened by its middle to each end of the apparatus, and then tied over the loins. To prevent the animal biting it, a strap may be passed from

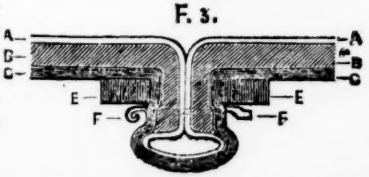
the head collar to the surcingle on each side, or a wooden rod fixed in the same position on one side.

I omitted to mention that the needle may be passed through the lips of the opening without the least danger, provided the skin of the sac is pushed by the finger a little inwards at the lip through which the needle is about to be thrust; this is also to be done with the other lip; so that the intestine is absolutely safe from any damage by the needle, and the operation may be performed without the least danger.

It is easy to foretell the results that will follow this mode of operating in the cases in which it is adopted, and considering its efficacy and the facility of its application, I am certain that it advantageously replaces all the procedures hitherto in vogue—topical irritants or caustics, ligatures, sutures, clams, bandages, etc. I, of course, except the trifling herniæ which have a very narrow ring, and which may be successfully treated by ligature of the sac, or in the dog by direct suture of the ring.

In order to ensure the success of the operation, good food in small bulk should be given, as it diminishes the volume of the digestive organs, thus lessening the tension of the abdominal walls while giving tone to the system, and consequently increases the vitality of the affected part.





The three outline figures given here show at a glance the nature and mechanism of the operation. In each figure the letters A B C represent the three planes of the abdominal wall—serous membrane, musculo-aponeurotic layer, and skin. Fig. 1 shows a hernia in its natural condition, before the operation; in fig. 2 can be seen the condition of the hernia after the pin has been implanted; while fig. 3 indicates the manner in which the clam E is sustained by the nail F, and applied against the three planes, brought together by their inner or deep surface.

For the domestic animals the application of this procedure appears to me to be of considerable value, but I do not know for certain whether it will be of the same utility in human surgery. It is for my honourable colleagues, who are competent to test it, to decide the question.

GLANDERS AND FARCY.

BY. H. W. SOUTHALL, M.R.C.V.S.

THE difficulty attending the choice of a suitable subject to bring before the notice of this Society is no doubt apparent to most of you ; however, I shall endeavour to surmount the difficulty by directing your attention to a disease of very great importance, viz., "Glanders and Farcy."

In Glanders we have a disease of a most deadly nature, a disease which has for years and years been carrying off our stock and menacing the lives of our people, a disease which is most probably on the increase, and one which past legislation has failed to exterminate. I might venture further than this, and say that legislation like that of the present will never exterminate it.

Its spread and suppression of late has been a question of general interest, and has occupied the time and attention of most of our eminent men, with the view of elucidating measures more efficient than those existing at the present time, for this purpose. I shall only give a superficial account of the symptoms of Glanders and Farcy, as they are well known to all of you ; my chief object will be to give ventilation to the most practical ideas put forward for its suppression, as well as to give you a short account of the latest discoveries in connection with this disease.

Glanders has been described under other terms : Malleus, Malleus humidus, Equina, Morbus farcimosus, &c., &c., &c.

Definition.—It is a specific, contagious, infectious, and malignant disease of the horse, ass and mule, with a special affinity for the air passages and lymphatic system, and is due to the presence of the *Bacillus Mallei* in the animal economy. It is capable of transmission to man, sheep, goats, dogs, cats, mice, rabbits and guinea-pigs ; but cattle, pigs, and fowls resist the virus, even when inoculated.

History.—Glanders and Farcy was first taken notice of by a veterinary surgeon in the army of Constantine the Great, in the fourth century. It was next described by Vegetius under the name of malleus. Lafosse first demonstrated

* Read before the Edinburgh Veterinary Medical Society.

clearly the inoculability of Glanders. Coleman proved contagion but was doubtful about infection; Percival believed it to be both contagious and infectious.

Geographical Distribution.—Glanders and Farcy are widely diffused diseases, but they are most frequently met with in temperate climates, and where horses are most artificially maintained, and the laws of health greatly ignored.

Pathology—Glanders and Farcy are terms employed to distinguish different forms of the disease. In Glanders when the disease affects the mucous membrane of the nose, nasal chamber, lungs, lymphatic glands and their ducts. In Farcy when the virus seems to attack the superficial lymphatic glands and ducts, skin, and connective tissue of the neck and extremities; both these forms may exist in the same animal at one time. Glanders belongs to the class of diseases known as the infective granulomata, which has a tendency to form granular cells and tissue disintegration.

The characteristic lesion of Glanders is a small tubercle or nodule which is found either on mucous membranes of the nasal passages or lungs; this is at first a greyish-white, firm granulation, composed of cells and nuclei; it soon tends to soften and form ulcers on the mucous membranes and cavities in the lungs. These nodules undergo certain changes, namely, fatty, caseous, and cretaceous degeneration. When cut into they are of a translucent, pearly grey colour.

The last stage of the nodule is ulceration; the central portion becomes softened in consequence of a proliferation of the pus cells, which are eliminated and leave a cavity the size of a small pea, the Glanders ulcer; this is surrounded by a very narrow indurated border, and has a hard resisting base, the bottom being grey and unhealthy-looking.

Glanders has been considered by some pathologists as analogous to tuberculosis. Villemin considered Glanders to be identical with it, but we must be careful to remember what Principal Williams says in his work on veterinary medicine. Whilst admitting the close resemblance between Glanders and Tuberculosis, we must hesitate to admit their identity, for the broad fact remains that inoculation with Glanders produces Glanders, whilst inoculation with the caseous matter of supposed tubercle is followed by the development of nodules which rapidly undergo a caseous change.

Causes.—The exciting cause of Glanders is the *Bacillus Mallei*. These bacilli are very minute, being 1-9000th to 1-6000th of an inch in length, and about one-fifth of their length in breadth; they are brought out by staining the

tissues with a concentrated watery solution of methyline blue, and after this washing with very dilute acetic acid, they have a beaded appearance when stained.

Schutz gives the following method of demonstrating the bacilli:—Sections are to be placed in a mixture of potass solution, 1 in 10,000 and concentrated alcoholic solution of methyline blue, equal parts; wash the section in a watch-glass with water acidulated with four drops of acetic acid. Transfer for five minutes to 50 per cent. solution of alcohol, 15 minutes to absolute alcohol, clarify in clove oil and mount in Canada balsam. The bacilli do not seem to readily take up any of the analine dyes, but when once stained they retain them with considerable pertinacity, though not to such a degree as the *Bacillus* tuberculosis.

The Glanders bacilli, after preparation, are seen as rod-like bacilli, usually straight or slightly curved, rounded at one end; they are slightly shorter and thicker than the tubercle bacillus.

The bacilli may be artificially cultivated in the incubator at 38°C., on solid sterilised serum of horses' and sheep's blood, or on gelatine; the first traces of growth appear in the form of minute transparent droplets, which consist entirely of the characteristic bacilli. The pure cultivation produces, when inoculated into horses, rabbits, mice, and especially guinea-pigs, the following results:—On the site of the inoculation appears an ulcer with an indurated base; other ulcers follow in the vicinity; the neighbouring lymphatic glands become swollen, the vessels corded, and general infection follows in the form of nodules and ulcers on the septum nasi and nodules or in internal organs.

The minimum temperature for the growth of the bacillus is about 74°F., maximum 100°F. Professor Sherrington, of the Brown Institute, London, has recently shown that the virus can live in ordinary London water for 26 days during the month of August, also that it may be destroyed in three days on exposure to ordinary sunlight. The exact mode of entrance of the bacillus into the animal body has not been determined, but it is certain that its contact with a wounded surface (skin or mucous membrane), will induce the disease. Professor Coleman's experiments prove that food and water containing the virus are unquestionably productive of the disease; this probably is the most common source of infection. Wisps, brushes, and cloths are, with other grooming utensils, said to convey the poison from the nostrils of diseased horses to the broken or abraded skin of the healthy. Whether

inhalation will cause the disease or not has not been definitely proved. Theoretically it seems possible, but practically there is no conclusive evidence in its favour.

The spontaneous origin of Glanders is believed by some authorities; it certainly appears as if it did originate in this way at times; this may be accounted for by the spores being carried a considerable distance in dust, also by conditions in the atmosphere, and only showing its specific effects when it gains entrance to an animal which is predisposed to it from some debilitating cause. The predisposing causes of the disease are those which, in some way not well known, influence the body in such a manner as to render it susceptible to certain diseases, provided such an animal is placed within reach of their exciting cause.

The predisposing causes of Glanders are: debilitating influences, such as faulty ventilation, overwork; bad food, old age, dirty undrained stables, exhaustive diseases, general bad management, and defective hygienic surroundings; these, singly or combined, by lowering the vitality of the body, make it an agreeable pabulum for the bacillus.

The malady has been known to follow such diseases as influenza, bastard strangles and polyuria; the last-named is considered by Principal Williams to be the most common forerunner of Glanders.

Dr. Fleming says it is almost certain to break out among army horses during a campaign; and we have ample proof of this in the Crimea, Franco-Italian struggle, and in the Franco-German war. In the last mentioned campaign great care had been taken that no glandered horses should be in the ranks of the German cavalry, and yet at the end of the campaign every regiment was more or less infected, owing to to the hardships and necessities of war. During the Crimean war Glanders was a common and most fatal disease.

Horses embarked on board ship have suffered from apparently spontaneous outbreak; the hatchways being closed during stormy weather, the horses were nearly suffocated owing to the heat and foul air, thus predisposing them to disease. It is very probable that the disease may have been caused by infection, as in certain forms the period of incubation may last up to six weeks or even longer.

Contagion and Infection.—Authorities differ very much upon this point, but it is generally admitted to be both infectious and contagious. Some say it is not infectious, that the poison is not volatile and does not permeate the atmosphere of a building. Experiments have been made in which

healthy horses were compelled to inhale the air from those suffering from the disease, and yet they did not acquire it. The poison introduced into the stomach by the animal eating flesh of diseased animals, or by giving balls containing the virus, will cause the disease.

In 1873, a lion and tiger died from Glanders through eating infected flesh in the Zoological Gardens at Berlin. It is also stated that it has been produced by the acts of copulation.

Incubation.—The period of incubation varies; like all morbid poisons it has its period of latency. In ordinary infection the duration is from one to three, or sometimes six weeks; it has been observed to be protracted to three, six, nine, or even more months. After inoculation the characteristic symptoms may be seen on the third or fourth day, and a discharge from the nostril on the sixth day.

The latent period may be diminished by accidental or other causes; in fact, by anything that may momentarily disturb the regular performance of the chief organic functions.

Equina is divided into four different forms, viz.:—Acute and Chronic Glanders, Acute and Chronic Farcy; there is another form described as Pneumonic or Pulmonary Glanders.

Symptoms of Acute Glanders.—The primary symptom is fever, ushered in by rigors of a persistent character; the temperature is increased, being as high as 106°, or even 108° or 109° F.; the pulse is rapid, feeble and soft; the respirations are hurried and irregular and the heart's action feeble; the appetite is impaired; there is depression and rapid emaciation. The Schneiderian membrane is highly congested and deeply ulcerated; it is at first of a dark copper colour turning to purple, and is covered with patches of ecchymoses which become converted into ulcers, the discharge from which is sanious and somewhat viscid; the lymphatic glands of one or both sides enlarge, other lymphatic glands become inflamed, suppurate and burst, and discharge a purulent fluid; the breathing becomes more difficult, owing to œdema and the discharge sticking to the nostrils. Abscesses form along the lymphatics of the face; the urine is increased in amount and albuminous. After two to four days, the pituitary membrane becomes studded with small nodules, varying in size from a pea to a pin's-head; these mostly affect the nasal septum and alæ of the nostrils. In a few days the nodules soften and ulcerate, and thus the nasal discharge is streaked with blood. Necrosis of the septum nasi and turbinated bones may occur This form runs a rapid course, ending fatally in a few days.

(To be continued.)

NOTES ON THE LIFE-HISTORY OF THE ANTHRAX BACILLUS.

BY J. WILSON-BARKER, M.R.C.V.S., STUTTGART.

IN the veterinary journals lately, so very much has been written about Anthrax that one almost hesitates before writing on it for fear of too much repetition; but in this short article it is my purpose only to bring together a few facts pertaining to the life-history of this interesting facultative parasite. Of course, much remains to be discovered. In nature it is at present impossible to say what governs the proper development of this germ, but all admit that certain climatic and telluric conditions are necessary. This fact is easily observed by the knowledge we have that Anthrax is more prevalent in certain seasons of the year and in certain localities. One must also take into consideration that the laboratory, or artificial cultures of the germ, although as near as at present possible to nature, are made too artificial to come to any definite proof as to what takes place in nature.

In the December (1893) number of the "Journal of Comparative Pathology and Therapeutics," page 378, there is an account of the discovery of the Anthrax bacillus in the mud of a well, which undoubtedly caused an attack of Anthrax among a flock of sheep. In "Nature" for September 7th, 1893, will be found a short paragraph regarding the behaviour of pathogenic germs in vegetable tissues, and it appears from the article that the anthrax bacillus was one of the germs experimented with. Experiments made with this germ proved that it grows, multiplies, forms spores, and retains its virulence in certain vegetable tissues. It may also be mentioned here that the germ of the "American corn-stalk disease" has been successfully cultivated from the corn and inoculated into cattle, producing that form of septicæmia in them known as the corn-stalk disease (see Dr. Frank S. Billings' "Corn Fodder Disease," 1892). Future discoveries in this direction will be most anxiously waited for, as it is one that has not gone so far as it undoubtedly will do, and is certainly one of the most difficult branches of bacteriology to follow.

In nature and in artificial cultures the anthrax bacillus is very sensitive to the want of oxygen, and also to variations of temperature. For instance, the formation of spores only takes place between certain limits of temperature (24° to 26° C.; this accounts for the fact that no spores are formed in the living body, but multiplication by transverse segmentation takes its place. So far as the dead bodies are

concerned, the want of sufficient oxygen (provided the bodies are not opened) would check the development of spores.

The bacilli themselves being easily destroyed, it is to the spores we have to look. From the recent discovery of the fact of vegetable tissues offering a favourable ground for the development of spores outside the body, one can see how the spores may, when they find a suitable spot to develop, produce, under favourable conditions, millions. The spores are extremely refractory to both chemical and physical means of destruction, strong sunlight being one powerful exception. So far as we know, the age limit of a spore has not been reached. Dr. Billings had a number on silk threads in a test tube for twelve years, and a piece of the thread placed beneath the skin of a rabbit caused death in less than twenty-four hours, the germs being easily found in the blood of the dead rabbit.

That the anthrax bacillus was originally a genuine saprophytic parasite must be accepted, from the fact that spores are only formed outside the body; this, in conjunction with the temperature it lives in (lower than that of the body), and its growth and development in all its varieties outside the body, surely points to this conclusion.

The mode of infection in most cases must be by the spores, as it is certain the bacilli themselves, passing into the stomach, would quickly be destroyed by the gastric juice. In accidental inoculation, as by a wound, the spores may not be necessary, because at the temperature of the body multiplication by fission would soon take place. An interesting experiment quoted in most text books, was that instituted by Buchner, who caused spores of anthrax to be inhaled, with the invariable result that anthrax followed, while when the bacilli themselves were inhaled no general infection took place, but only a violent pneumonia.

The existence of the parasite in nature has been most practically demonstrated during the last twelve months. That it exists near or on the surface of the soil is certain; that it grows and multiplies, like many other germs, in vegetable tissues, has also been demonstrated. Experiments have proved that the bacilli cannot live far below the surface (6–12 feet) because the temperature is too low. This discovery entirely disposes of the earth-worm theory of Pasteur, which is no longer accepted. It can now easily be seen where the source of danger lies in a dead beast; not in the carcase buried some six to eight feet below the surface of the ground, but in the discharges from the natural orifices, and which discharges have been left on or near the surface ofthe soil.

ON THE EMASCULATING BOT-FLY.

In the last issue of the VETERINARY JOURNAL (page 108), allusion was made to the discovery of the larva of a bot-fly in the scrotum of a dog, and that it had been identified as belonging to the genus *Cuterebra*, individuals of which are known to infest squirrels, hares, and mice. This is, we believe, the first mention of this cuticolous larva infesting one of the domesticated species, and now that attention is directed to the discovery, it is not unlikely that it may be found in some of the other species.

In Neumann's "Classical Treatise on the Parasites and Parasitic Diseases of the Domesticated Animals" (English translation, p. 46), it is stated that of the thirteen genera into which Brauer divided the Œstridæ, only four—the *Hypoderma*, *Dermatobia*, *Cuterebra*, and *Œstromyia*—were cuticole larvæ, and that of these four genera the first two alone develop as larvæ beneath the skin of domestic animals in Europe or other parts of the world, and were, therefore, only those to be described in the above-named book.

In consequence of the discovery of the Cuterebra larvæ in the scrotum of a dog in Canada, this statement will have to be modified, and it is possible that these larval insects may be found infesting the scrotum of other domesticated creatures.

In view of this possibility, it may be interesting and useful to ascertain what is known of this emasculating bot.

It appears that a Dr. Fitch, in his "Fourth New York Report," published nearly half-a-century ago, gave a long and particular account of it, and this at the time attracted great attention. That a bot-fly existed which, according to his statements, apparently bred only in the testicles of "chipmunks" or "gophers" and squirrels, was looked upon as a remarkable circumstance. He succeeded in rearing only one adult, which issued about July 29th, 1857, from earth in a jar in which the larva had been placed on September 1st, 1856. So far as is known, this is the only adult of the species which has ever been reared.

Dr. Fitch, in his interesting and careful description of the different stages in the development of the insect, gave the species the name of *Cuterebro emasculator* from the larval habit which he supposed to be characteristic. He mentions the fact that hunters in the vicinity of Lakeville, New York, where the first specimen sent him was found, had long been familiar with the fact that at least one-half of the male gray squirrels shot in that vicinity were found to be castrated, and that it was the opinion of these men that the mutilation was

caused by the squirrels seizing and biting out the testicles of their comrades. In support of this idea he gave the testimony of Mr. Hurst, taxidermist of the New York State Cabinet of Natural History, who claimed to have seen a half-dozen red squirrels unite in mastering a gray one and castrating it. Dr. Fitch queried whether the bot-fly might not be attracted by the wound so made, if this habit proved common, but concluded that the object of the joint attack of several squirrels upon one was rather to kill the grub which was engaged in emasculating the creature.

Since Fitch's publication the fly and its larva have not received much notice from entomologists, and it is not until 1889 that it is again specially referred to in one of the numbers of an excellent serial* issued by the Entomological Division of the United States Department of Agriculture, to which we are indebted for the particulars now given on the subject.

It seems that there is still some doubt as to whether Fitch's species will prove correct. Brauer, in his monograph on the Œstridæ (page 232), quotes Fitch's description at length, and asserts that he cannot separate the species from *Cuterebra scutellaris* (Löw) a North American species, the habits of which do not seem to be known. The finding of the larva in the scrotum of a dog in Canada, would almost lead one to believe in the identity of Fitch and Löw's insect.

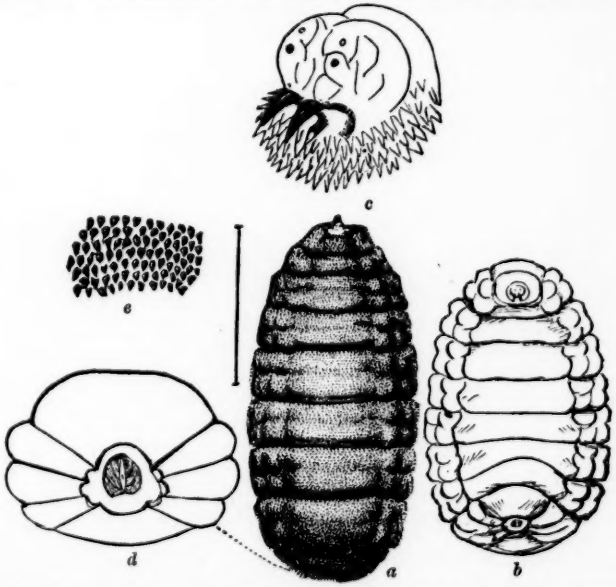
The serial above alluded to remarks, that if this interesting insect has not attracted much attention of late years from entomologists, it has not failed to be noticed by zoologists and taxidermists; although the writer of the article is not aware that observations have been published. The following statement was written at his request by Dr. Merriam, the Ornithologist of the Department of Agriculture, as he had made notes some time previously on the abundance of the insect in New York State:—

"In reply to your inquiry concerning the occurrence of Cuterebræ in squirrels, I would state that during many years collecting in the Adirondack region of northern New York, particularly along its western border, in the Black River Valley, I frequently found Cuterebræ in or near the scrotum in the Gray Squirrel (*Sciurus Carolinensis leucotis*), Red Squirrel (*Sciurus Hudsonius*), and Chipmunk (*Tamias striatus lysteri*). I have observed the same thing at East Hampton, Massachusetts, and in other localities. The most extraordinary instance of the prevalence of this disgusting parasite that has fallen under my observation was at the south end of Lake Champlain, New York, in October, 1885. On the 7th and 9th of that month I killed more than fifty chipmunks within a few miles of old Fort Ticonderoga, and on the rocky side hill behind the town of Whitehall. Of these a very large percentage—I think fully one-half—were infested with "wabbles" (Cuterebræ).

* "Insect Life," Vol. I., No. 7. We owe our best thanks to Dr. Salmon, of the United States Bureau of Animal Industry, for a copy of this serial.

More females than males were thus afflicted. The wabbles* were usually situated near the median line, and anywhere from the umbilical region to the genitals. In a few cases they were in the axilla, and in one or two instances in the upper part of the foreleg. In a number of individuals two Cuterebræ were found, and in a few cases as many as three. Dr. A. K. Fisher tells me that he collected a number of chipmunks about the south end of Lake George, Warren County, N.Y., during the latter part of August and 1st of September, 1882, a considerable proportion of which were infested with Cuterebræ. As many as three were found, in different stages of development, in one animal. A gray squirrel killed at Sing Sing, Westchester County, N.Y., contained a Cuterebra in the left pectoral region."

The object in publishing the date in the periodical referred to, was to introduce for the first time careful figures of the full-grown larva, obtained from a recently-dead chipmunk which had been put into a box. The larva or maggot was found in a corner of the box, it having escaped from a "swelling" under the animal's body; the tumour was about an inch long and of the shape of a mulberry, and there appeared to be a natural opening at its apex more than a sixteenth of an inch in diameter, with a tinge of a dark liquid about it.



Cuterebra emasculator.—*a.* Full-grown larva, upper surface. *b.* Under surface, enlarged. *c.* Head of ditto. *d.* Anal extremity. *e.* Portion of integument, magnified.

* Our English "Warbles."

Editorial.

THE VETERINARY SURGEONS ACT OF PARLIAMENT AND COLONIAL VETERINARY SURGEONS.

A GOOD deal has been said lately as to the unprotected condition of qualified veterinary surgeons in our Colonies, and the serious competition they have to engage in with persons who possess no professional qualifications, and are simply quacks. The complaints made are doubtless only too well founded, at any rate with regard to some of the Colonies, and the position of graduates of the Royal College of Veterinary Surgeons in these is one of hardship and discouragement, and must command our sympathy and all the assistance we can afford. The question is as to what possible aid can be offered, and what steps should be taken to render it effective? Can our legislature interfere on behalf of our colonial colleagues, and afford them the same protection as the Veterinary Surgeons Act of Parliament has conferred on members of the veterinary profession at home? Evidently some people think it can, and that the position of veterinary surgeons in the Colonies was not considered by those who were instrumental in obtaining the Veterinary Surgeons Act. For instance, a contemporary dealing with the subject of veterinary practice in the Colonies, says: "In our apathetic gratitude for small mercies, we accepted the Act of 1881 as a boon too long delayed, but our insular bias did not permit us to see what is only too apparent to-day, that the provisions of the Veterinary Surgeons Act did not reach far enough. The difficulties which our members experience who practise abroad, and other circumstances to which we need not refer, force the conviction that our first Act was conceived in haste and executed without regard to future necessities . . . . If we desire to secure to our members who reside in the Colonies, and to those who may join them, protection and other privileges of the kind enjoyed by medical men, no time should be lost in laying our plans for an amended Veterinary Surgeons Act."

It is surmised that the writer of these remarks has little, if any, knowledge of the great deliberation and consideration that were given to the framing of the Act, so as to make it as comprehensive and far-reaching as possible, nor yet of the

anxiety and toil undergone by those who were determined to obtain it in spite of the strongest opposition to its progress in the House of Commons from the great body of unqualified practitioners, and also, strange to say, from some members of the Royal College who did not desire professional protection. When the writer speaks of the Act as a small mercy he talks nonsense. Previous to its obtainment Veterinary Surgeons in the United Kingdom were in the same position as their brethren in some of the Colonies now are. The Act gave them a legal status such as they had not before possessed, and such as had been accorded to other learned professions; it gave them full protection against the invasion and competition of the quack and impostor by safe-guarding their professional designation, and imposing pains and penalties on those who usurped it; it even prohibited the word Veterinary being borrowed by those who did not pretend to doctor animals; while it gave the profession power to enforce discipline in its own ranks, and to remove the names of unworthy members from its register.

Surely all this constituted something more than a *small mercy!* More was sought for by those who initiated and carried out the movement which culminated in the Veterinary Surgeons Bill becoming an Act, but more could not be granted; and, indeed, so threatening and powerful was the opposition becoming that at one time it looked as if disaster was inevitable, and but for the admirable tact and judgment of the Right Honourable Mr. Mundella, the present President of the Board of Trade, the Bill must have been lost. It is an easy matter to speak lightly and slightingly of the Act now, but it was an immense task to obtain, and as great a boon when obtained.

The statement that its provisions do not reach far enough, that it was conceived in haste and executed without regard to future necessities is simply fudge, and has no foundation. The provisions of the original Bill were under consideration for a long time, and the legislative skill and knowledge of Lord Aberdare were invoked in its primary construction. Among other privileges sought for in the Bill was the exemption of members of the veterinary profession from serving on Juries, but this was thrown out in the House of Lords, its strongest opponent being the Lord Chancellor. Application was also made to have its provisions extended to the Colonies, but this was at once negatived, and for the simple reason that our legislature cannot frame laws for them; that is the business of their own legislative chambers.

With this fact in mind, it sounds strange to hear of a demand for an amended Act which is to include the Colonies in its operative scope. Such a measure is impossible, and it seems that all that can be done is to move the Colonial Office to suggest to the Colonies the desirability, in their own interests, of affording protection to duly qualified practitioners of Veterinary Medicine and Surgery, or for the Royal College of Veterinary Surgery to appeal direct to the law-makers in these Colonies. Medical men practising in them are only protected by laws framed and passed in them, not conceived or sanctioned in our legislature.

It would be interesting to learn from those who think so little of the Veterinary Surgeons Act, what amendments they would seek beyond those which have already been asked for, and what likelihood there is of obtaining more privileges than the present Act confers. An Act of Parliament may give protection to a profession, but it cannot make, maintain, or improve a profession; that must rest with the members constituting it, on whom the responsibility devolves of promoting its usefulness, elevating its character, and furthering its aims. Acts of Parliament are secondary and subsidiary to these objects.

THE DISEASE SURRA IN SOLIPEDS AND CAMELS.

A MOST elaborate and voluminous report has just been issued by the Indian Government, on the widespread and fatal disease occurring in different parts of Asia, and which is known as Surra. The report is drawn up by Dr. Lingard, Professor of Bacteriology and Comparative Pathology in the Indian Civil Veterinary Department, and forms a massive volume weighing about twelve pounds; and even this appears to be only the first instalment of the investigation, as it is indicated as Volume I.; the report as a whole dealing with "Naturally Acquired and Experimental Surra" in horses, together with the results of an inquiry into the experimental treatment of the disease. The report is to appear in three volumes. The present volume contains horse surra and experiments with the infusorian obtained from the horse; the second volume will deal with surra as it occurs in rats and dogs, and the presence of the infusorian in certain kinds of fish; while the third volume will enter into the minute pathology of surra in horses, etc., and the life history of the infusorian. The labour expended in preparing the present volume must have been very great, and the expense heavy. There are many charts of pulse, temperature, and respirations, and ten collotype plates, though this process does not lend itself advantageously to pictorial illustration of such subjects, nearly all of the pictures being very indistinct. Dr. Lingard acknowledges the assistance he received from several officers of the Army Veterinary Department, especially Veterinary-Captain Cooper and Veterinary-Lieutenant Pease, and in a less degree to Veterinary-Lieut.-Colonel Russell, Veterinary-Captain Mills, and Veterinary-Lieutenant G. H. Evans, while the work of the late Veterinary-Lieutenant J. Steel is generously alluded to.

The task of wading through such a mass of type and table is happily obviated by the Indian Government having issued, separately, a summary of the contents of the volume, and as it gives a good idea of the scope and results of the investigations, so far as they have been published, we will avail ourselves of it for the benefit of our readers. It will be observed that our knowledge of the prevention or cure of the scourge is very little advanced, notwithstanding the serious attempts to discover them. But it is to be hoped that this achievement is possible, and that it will soon be effected.

The summary states that:

"*Surra* is a specific and continuous febrile disease occurring spontaneously in solipeds and camels, and capable of being transmitted by inoculation to other animals: dog, cat, guinea pig, goat, oxen, etc. It is due to the presence in the blood of an infusorian (*Trypanosoma Evansi*). It is a very fatal disease in solipeds, no case of recovery having been met with. The malady is characterized by progressive anæmia, and this leads to wasting and death after a variable period. The mature form of the infusorian is not continuously present in the blood, but appears and disappears at irregular intervals. The report contains the historical account of the disease. It was first noticed by Evans, who demonstrated the presence of the infusorian, and who also recorded the symptoms, &c., and essayed treatment, though unsuccessfully.

"Steel investigated the disease in Burma five years later, calling it "relapsing fever." According to Steel's observations, it seems that the disease, as it is met with in Burma amongst mules, differs from that met with in the horse in Bombay; but the chief characteristics are the same, and the presence of the *surra* organism is invariable. Other observers have met with the disease —Nuttall, Gunn, and Steel—in India. Ranking was evidently mistaken in his diagnosis, as he speaks of it being of malarial origin, and says that quinine will cure it.

"Lieutenant Baldwin, R.A., and Veterinary-Lieutenant G. H. Evans have given a good account of the disease as met with in Burma.

"The history of *surra* in the stables of the Bombay Tramway Company is recorded. From this it appears that although every effort has been made to prevent the introduction of the disease, it has been so far of no avail.

"*Geographical Range.*—This is wide—Dehra Ismail Khan, along with the North-Western frontier, east of the Indus, in the low countries bordering that river. It is very prevalent in Upper Burma, and according to Steel 98 per cent. of horses and mules died from it during the war. It is also prevalent in the low-lying parts of Bombay, in Berar and the North-Western Provinces, and probably exists in other countries.

"*Etiology.*—Predisposing causes. Sex has no influence. It appears to attack animals chiefly between the ages of 5 and 14 years. Australian horses suffer more than those of Asia. The localities in which *surra* is enzootic belong to two distinct kinds of climate. The one with a heavy rainfall, high temperature, and humid, steamy atmosphere; the other, a dry arid neighbourhood, presenting a great annual range of temperature. But in both classes of localities, inundation of land during the rains leaves the fields covered with mud at a later date, and evaporation and concentration of the water in the tanks occurs during the hot season. It is therefore, it appears, necessary for an animal to reside during certain months of the year (chiefly September, October, November, and December) in a locality where *surra* is enzootic, and where he will eat the sedgy vegetation, and consume the water from stagnant pools and wells and other sources, which have been contaminated with the *materies morbi*.

"Wounds of all kinds, and more especially those involving the digestive tract, exert some influence by affording a point of entry to the infusorian. The bites of the large fly, called "Bara dhang," may also cause the disease,

by reason of some of the infusoria adhering to its sucker after its having bitten a diseased animal, and being inoculated into the next healthy animal it attacks.

"*Exciting Causes.*—Everything points to the *Trypanosoma Evansi* as the *vera causa* of the disease; but this has not been absolutely proven, as it has not, up to the present time, been found practicable to isolate the infusorian and obtain a pure cultivation. It is certain, however, that no case of *surra* occurs in which the infusorian is absent; that blood containing it will invariably induce *surra*; that after passing it through the blood of various animals, and again inoculating it to the horse, *surra* results; that *surra* blood, deprived of its formed elements by filtration, will not cause the disease on inoculation; and, lastly, that the presence or absence of the infusorian in the blood, influences the course of the disease to a very marked degree, dividing it into its various stages, viz., paroxysms and intermissions.

"*Contagion.*—*Surra* does not appear to be "contagious" in the ordinary acceptation of the term; the contagion is neither conveyed by the air, nor under ordinary circumstances by the sick to the healthy; but at the same time it must not be forgotten that an animal suffering from the malady must be a source of danger, owing to blood-stained discharges contaminating the food and water consumed by healthy animals, for we know that the ingestion of blood containing the infusorian causes the disease. The sick are especially dangerous when they are kept near animals which have wounds, for it has been proved by experiment that the fraction of a minim of soiled blood containing the infusorian, placed between the edges of a minute wound in the cuticle, is sufficient to reproduce the disease in seven days.

"*Latent Period.*—This varies with—(1) The species of animal inoculated; (2) means used for inoculation; (3) the material used; (4) whether the material is taken *ante* or *post-mortem*; (5) the quantity of material introduced.

"The extreme irregularity of the latent period is well shown by Table XI. at page 61 of the report, where it will be seen to vary from one to seventy-five days.

"The symptoms are thoroughly dealt with and analysed, as are also the stages of the disease.

"The macroscopical lesions are also noticed at length, but the microscopical examination of the tissues has yet to be dealt with.

"*Treatment.*—The treatment of the disease has been undertaken, and various therapeutical agents have been employed with a view to the destruction of the infusorian in the system.

"*Mercuric Chloride* has been employed subcutaneously and also by direct injection into the circulation, with negative results.

"*Iodine and Iodide of Potassium* by intertracheal injection, and also by subcutaneous inoculation, were followed by negative results.

"*Iodoform*, by subcutaneous injection and also by direct injection into the jugular, produced no good results.

"*Oleum terebinthinæ*, by subcutaneous injection, and by injection into the jugular, was followed by negative results.

"*Potasii Bichromas*, directly injected into the circulation, and by gastric ingestion, produced no marked effect upon the infusorian.

"*Mixed Cinchona Alkaloids and Arsenic* did not destroy the infusorian.

"*Carbolic Acid and Iodine*, seventy-six drachms of the former, and thirty-four-and-a-half drachms of the latter in six days, produced no apparent effect on the infusorian.

"*Quinine*, in large doses, had no effect on the infusorian.

"*Iodic Hydrarg*, a very powerful antiseptic, had no effect.

"*Santonin* had no effect.

"*Potass* had no effect.

"*Arsenic.*—The administration of this agent is undoubtedly followed by a marked effect on the mature form of the infusorian; for after a quantity of it has entered the system the crops of infusoria do not appear in the blood, as they do in cases which have not been treated with it. In one case treated, the mature infusorian was absent from the blood for 84 days, and the system appeared to re-act in a marked manner at first to the drug. With regard to the effect of arsenic on the infusorian, therefore, it doubtless exerts some influence prejudicial to its development, as can be seen on consulting the charts of horses in the treatment of which it had been used; but so far as the report shows, it appears probable that the infusorian may exist in the immature form, and continue to cause mischief which prevents recovery.

"That the absence of the mature organism from the blood of an animal is not a certain sign that it is destroyed, will be gathered from the experiments made with the blood of a bull, recorded at CCXIII. of the appendices to the report. The remarks on page CCXXII. may be read in this connection. In this case, although no mature infusoria were observed in the blood after the first paroxysm, the inoculation of the bull's blood, taken at periods varying from 85 to 163 days from the date on which the parasite had disappeared from the blood, was followed by positive results, the animals, the subject of inoculation, perishing from *surra*. It is not, therefore, beyond the range of possibility that although no mature infusoria could be detected in the horses treated with arsenic, the immature form, which has not yet been recognised, may have remained present, and that although the system re-acted to arsenic, and some amelioration of the symptoms occurred, the effects were not sufficiently energetic to completely overcome the mischief caused by the mature parasite, and that which might arise from the presence of the immature form; so that the progress of the disease, although checked, continued towards a fatal termination. It seems more likely that this should have been the case, than that the animal should have succumbed to the poisonous action of arsenic, for the majority of cases do not point to death from arsenical poisoning, neither in the symptoms nor in their *post-mortem* lesions.

"The decision of this point will best be arrived at by the experimental inoculation of small animals susceptible to the disease, at different times, during the absence of the infusorian from the blood of the animal under treatment.

"The effect of doses of arsenic, similar to those used in treatment, will be easily determined by experiments on healthy animals. The number of animals treated with arsenic is at present too few to allow of the question being properly decided, but there is no doubt that the results achieved in treatment with the drug are more hopeful than any which have been obtained previously.

"The subcutaneous inoculation of blood and its derivatives, in its different forms, obtained from animals suffering from, or which had lately succumbed to, *surra*, was also tried to ascertain whether it contained any substance capable of conferring immunity against the disease, but the results were negative.

"The efficacy of arsenic as a prophylactic has not yet been demonstrated, and it will be necessary to do this before its recommendation can be safely made.

"Probably the best method would be to subject animals to a course of arsenic, and then to experimental inoculation with small quantities of the infusorian. The other recommendations as to prevention are, in the majority of cases, not practicable.

"Further experiments in treatment and on the debatable questions are therefore desirable, but the facts noted in the report with regard to the nature of the disease are most valuable, and Dr. Lingard deserves much credit in having so thoroughly investigated the cause and nature of the malady."

THE EMPLOYMENT OF MALLEIN IN SWITZERLAND.

We learn that, on the initiative of the veterinary surgeons of Geneva, the Swiss Department of Agriculture appointed a Commission to draw up regulations with regard to the employment of mallein as an agent for testing the existence of glanders in horses. The Commission has completed its task, and the regulations it drew up have been adopted by the State Council of Geneva, which has issued an Act for carrying them into operation. In this it is ordered that all horses, asses, or mules belonging to a stable or establishment in which a case of glanders has been detected, shall be submitted to the test of mallein. All suspected animals shall undergo the same test. Animals so tested shall be valued before the injection of mallein is made. The owner of every animal killed after this injection and found to be glandered, shall receive one-fourth of its estimated value. If an animal is killed as a result of the injection, and on the autopsy presents no indications of glanders, then the owner will receive its full estimated value.

THE EIGHTH INTERNATIONAL CONGRESS OF HYGIENE AND DEMOGRAPHY.

This Congress will be held at Budapest, Hungary, from the 1st to the 9th of September of this year. From the provisional programme which has been forwarded to us, we learn that in the Veterinary Section the following questions are to be discussed:—1, Inoculation against Anthrax and Swine Erysipelas; 2, Inoculation against Contagious Pleuro-Pneumonia; 3, Inoculation against Swine Gangrene by Bacilli; 4, On the Diagnostic Value of Tuberculin; 5, Glanders (Mallein); 6, The Pneumo-bacillus and Pneumo-Bacillin; 7, Regulations for the Examination of Fresh Meat; 8, Hygienic Control of Products of Milk; 9, Parasites as Causes of Disease; 10, Prevention of Tuberculosis; 11, Prophylactic Measures against Foot-and-Mouth Disease.

CAN CONTAGIOUS PLEURO-PNEUMONIA BE COMMUNICATED BY AN AFFECTED COW TO ITS CALF BEFORE BIRTH?

A correspondent to the Cape of Good Hope *Agricultural Journal* asks the above question after having met with evidence which leads him to think such an occurrence is possible. A reply is given in the same periodical by Mr. Hutcheon, M.R.C.V.S., the Colonial Veterinary Surgeon, who has had great experience in this disease as it affects not only bovines, but in the analogous disorder in goats; and as this reply embodies some interesting observations, we quote it here. He says:—In repiy to Mr. Impey's interesting communication, it is not generally admitted by scientific experts that a cow affected with contagious pleuro-pneumonia can communicate the disease to her calf before birth, but, as I stated in a communication which appeared in the *Agricultural Journal*, No. 15 of Vol. V., when a pregnant cow is inoculated, and the inoculation, as it frequently does, extends up the absorbents of the tail into the pelvic and abdominal cavities, and produces its characteristic exudation in the tissues and organs situated in these cavities; in such cases the disease is occasionally communicated to the calf in the uterus. Such infection of the fœtus was observed to occur frequently, as a result of inoculation in that contagious form of pleuro-pneumonia which prevailed amongst goats in 1881. I stated also that my experience with the inoculation of cattle in this colony led me to form a very decided opinion that in individual instances pleuro-pneumonia was communicated direct to a healthy beast by means of inoculation. I admit that such cases are comparatively rare and somewhat difficult to explain, but in no other way could I account for certain cases, in which the lungs became affected, in perfectly healthy herds, after inoculation, where there was no other source of infection known.

In the contagious pleuro-pneumonia of goats this fact was proved to demonstration, for I actually communicated the disease to a great many goats by hypodermically injecting too large a dose of the virus, although the injection was made at the under surface of the tail, and unaccompanied by any unusual local swelling.

Further, it is a well-known fact that the characteristic exudation found in the lungs of affected cattle, can be produced in any part of the body, externally or internally, wherever there is connective tissue, by artificial inoculation. For instance, if a beast is inoculated about the breast, the characteristic exudation will rapidly form in the connective tissue of the part, and extend until, in some instances, I have seen it enter through the anterior opening of the chest, and involve a considerable portion of the front part of the lungs before the animal succumbed. In like manner, when the inoculation extends up the tail into the pelvic and abdominal cavities, the whole of the organs and tissues situated in these cavities are frequently found saturated with the characteristic exudation of lung-sickness. In a similar way, when the fluid found in the chest of a beast affected with pleuro-pneumonia is administered by the mouth to healthy cattle, as a preventive of the disease—a common practice in this colony—should there be any wound in the mouth or about the throat, or any abrasion of the mucous membrane of these parts, local inoculation is certain to take place, and the animal invariably dies from the effects of the extensive local exudation which follows. Further, I have seen the characteristic exudation occur in the abdominal organs after the animal had been drenched with the fluid from the chest of an affected beast, the whole of the abdominal organs being glued together by an exudation exactly similar to that found in the lungs, while the abdominal cavity was filled with fluid closely resembling that found in the chest in an ordinary case of the disease. In such cases the abdominal inoculation takes place through some abrasion of the mucous membrane of some portion of the bowels.

It is important to bear in mind, however, that large quantities of the fluid virus taken from the chest of an affected beast may be administered to healthy cattle by the mouth with perfect safety, and without producing the disease either generally or locally—so long as the epithelial covering of the mucous membrane liningthe digestive canal remains healthy and sound. But although a healthy and sound mucous membrane appears to effectually prevent the active germs of the virus from entering the mucous and sub-mucous tissue of the bowels, and therein producing their characteristic local effects, it is very evident that the product of these germs gains an entrance to the circulation, and produces its specific effects on the system of the animal generally. This is abundantly proved by the well-established fact that, by drenching a healthy beast with about ten ounces of the fluid from the chest of an affected beast, you give that animal an immunity from the disease just as effectively as if you had inoculated it, although there is no local manifestation of the disease produced. It would appear that intra-venous injection of the virus gives the animal operated on an immunity from the disease in a similar manner.

It is interesting to note in this connection that, although a quantity of the fluid virus fails to produce its local effects on the healthy mucous membrane of the digestive canal, it is through the more delicate mucous membrane which lines the small bronchial tubes and air cells of the lungs that ordinary infection takes place. But even in the lungs it would appear that the germs of the disease gain an entrance only at certain spots or centres, and the diseased action extends from these limited centres until the whole lung may become involved in the diseased action. It is further to be noted that, in the large majority of cases, the disease is confined to one lung, the other remaining

perfectly healthy, except in the later stages, when it may become affected by extension of the disease from the primarily affected one.

Taking all these facts into consideration therefore, I do not think that it is possible for a cow affected with contagious pleuro-pneumonia, to communicate the disease to her calf while in the uterus. I think that it is quite possible, and very probable, that the products of the active germs of pleuro-pneumonia may pass from the mother to the fœtus in the uterus, and produce their specific action on the blood of the fœtus, but I do not think that the lungs of the fœtus would manifest the typical appearances of pleuro-pneumonia. I am of opinion, however, that if such a calf were to live, that it would have an immunity from the disease for some time.

It may be asked what was the matter with the lungs of these calves which died so soon after birth, if it were not the real lung-sickness? To this question, I am unable to give a satisfactory answer, not having seen them; and of course, I cannot say *positively* that they were not affected with the real pleuro-pneumonia. I think it most probable, however, that the calves died from a sort of blood-poisoning, and that the lungs were congested and diseased-looking, but that there was none of the characteristic exudation of the real lung-sickness present.

CONTRIBUTION TO THE STUDY OF FATIGUE.

BY J. E. ABELOUS.

EXPERIMENTS made long ago by Helmholtz, du Bois-Reymond, and Ranke, and the much more recent experiments of A. Mosso, have established the fact that there are produced, in the course of muscular work, toxic substances, the results of tissue disintegration, an accumulation of which in the body gives rise to fatigue.

Ranke, by injecting into the muscles of a frog an aqueous extract prepared from the muscles of an animal of the same species fatigued by prolonged muscular contraction; and A. Mosso, by injecting into the veins of a normal dog some of the blood of another dog tetanized during a certain time, have observed, as a result, the phenomena of fatigue.

It is the purpose of the present memoir to study the mode of action of these substances thus elaborated in the course of muscular work. We know, from the numerous researches which have been made, that muscular fatigue may be the result of two factors,—first, exhaustion, that is to say, exaggerated waste, and consequently a lack of material necessary for work, which plays, in all probability, only a secondary rôle. Ranke, in fact, has shown that it is sufficient to cause to pass into the vessels of a fatigued muscle a simple physiological solution of marine salt, to restore to it immediately its aptitude for work. In this case, the saline water acts only by washing out of the muscles the products of tissue waste which accumulate in the interior of a fatigued muscle. It is, then, to the second factor, the intoxication, that we must attribute the greater part of the phenomena of fatigue.

Upon what elements do these toxic substances act? Their action is gradual and progressive.

When one excites an animal—a frog for example—with a Faradic current with very frequent interruptions in such a manner as to produce general tetanus, we observe at the end of a certain time, that the excitation of a motor nerve—the sciatic, for example—even with very strong currents, no longer produces muscular contractions, notwithstanding that the direct excitation of muscles with currents of most feeble intensity provokes very distinct motor reactions. At this phase of fatigue, the animal is absolutely comparable to a curarized animal. It is not, in fact, the nerve-trunk itself which has lost

its excitability. The indefatigability of nerves is to-day established beyond all doubt by the experiments of Bernstein, by Wedenskii, and by Bowditch. It is the union of the nerve and the muscle which is alone affected. At a more advanced period of the experiment, the muscle itself is affected, and its direct excitation no longer provokes contraction. It is this passing phase, this paralysis of the motor terminations in the course of experimental fatigue, which I propose to study, especially those experiments which have been made upon the frog. These may be divided into two series :—

1. The effects of tetanization after anæmia of a part ; and
2. The effects of tetanization after enervation of a part.

The author describes minutely a large number of experiments which were carried out with very great care, from which he draws conclusions as follows :—

We find, in the above facts, a clear demonstration that auto-curarization manifests itself at a certain period of fatigue. This fact has not failed to strike physiologists who have studied muscular fatigue. In a memoir published in *Brain*, A. Waller indicated these phenomena.* On the other hand, in his fine researches upon the law of fatigue, Prof. A. Mosso has demonstrated that the personal type of fatigue remains identical, even when the action of the will is excluded ; that is to say, when one excites directly the motor nerve, upon which we understand that psychic influence exercises no preponderant action, and that fatigue may be also a peripheral phenomenon.†

In experimental fatigue provoked by electrical excitation inducing neuro-muscular activity, this peripheral paralysis plays a preponderant rôle. The experiments which I have presented demonstrate clearly, it seems to me, the existence and the mechanism of this paralysis of the terminal motor plates.

In a series of experiments it was found that paralysis due to auto-intoxication, occurred in the nerves of parts which were not made to act, an effect which can be explained only by the transportation through the circulation of toxic substances possessed of curarizing properties which are elaborated through the work of the muscles of other portions of the body. This paralysis affected not only the homonomous members, but also to a certain degree the anterior limbs, the experiment being conducted upon the posterior limbs. This intoxication is peripheral in character, since the centripetal conductivity of the nerves remained intact, and the excito-reflex properties of the cerebro-spinal axis were not affected. Parts from which the blood supply was cut off enjoyed immunity from the paralysis which affected the rest of the body. The explanation given for this was as follows :—

"In the intact member, where the circulation is free, the paralysis is the consequence of the poisoning of the motor terminations by the substances elaborated in the course of the neuro-muscular work. It is the products of disintegration produced by the entire animal which paralyzed the motor termination of the intact member. In the anæmic parts the nerve terminations are acted upon only by the toxic substances formed *in situ* ; consequently, these substances are much less considerable in quantity than those which, thanks to the incessant circulation of the blood, irrigate the termination of the limb not ligated."

Résumé.—These experiments show that in the course of fatigue the body manufactures toxic substances which, at a given moment, produce a veritable curarization of the animal. When the fatigue is pushed to its extreme limit, the irritability of the muscle itself is notably affected, as is remarked by M. Waller in his memoir. In voluntary fatigue, the effects are not so profound ; for the nerve centres first affected act, so to speak, as regulators, the

* A. Waller, "The Sense of Effort ; an Objective Study." (*The Brain*, 1891, vol. 14, p. 218.)

† A. Mosso, "La Fatica," chap. 4, p. 106.

central fatigue preceding the peripheral fatigue, and thus preventing the individual from going to the point where peripheral fatigue is produced. But it should not be forgotten, however, that even in involuntary fatigue the peripheral element plays an important rôle, as has been established by Mosso and his pupils. The experiments of which I have presented the results, will perhaps contribute to the elucidation of the mechanism of this peripheral fatigue, which appears to consist essentially in an auto-curarization.—*Archives de Physiologie Normale et Pathologique. Modern Medicine.*

TUBERCULOSIS AND BUTCHERS.

THE subject of tuberculosis in cattle is becoming a grave difficulty in the relations between, respectively, the Government, the butchers, and the breeders A large number of butchers in Scotland (according to the *Banffshire Journal*), with a view of inducing the salesmen at the various auction marts throughout the North to take such steps as are in their power to protect the butchers and cattle-dealers against loss arising from tuberculosis or any other disease in stock sold at their respective sales, have agreed not to purchase cattle, sheep, or pigs at certain specified auction marts till the question of responsibility for loss through tuberculosis and other diseases in cattle is settled to the entire satisfaction of the signatories. The marts in question are as follow:—Tain Auction Mart, Forres Auction Mart, Dingwall Auction Mart (M'Intosh's) Elgin Auction Mart (Bruce's), Invergordon Auction Mart, Craigellachie Auction Mart, Inverness Auction Mart (Hamilton's), Keith Auction Mart. The question is not free from perplexing difficulties. When cattle are found affected with tuberculosis they are destroyed by order of the public health authorities, which, however, only pay one-third of the loss, instead of, as in the destruction of pleuro-pneumonia, carried out by the Government, the whole loss as ascertained by valuation, but with a fixed maximum over which the Government will not pay. The existence of tuberculosis in cattle is undoubtedly a matter involving issues of the greatest importance to the stockowners of the country. For two years, a commission of scientists has been taking evidence and conducting experiments regarding the disease, and the report is expected to be published in a very short time. What action may follow its production is unknown. If the Government Department of Agriculture take it up, and do as they have done with foot-and-mouth disease, pleuro-pneumonia, and swine fever, the difficulties that surround the question will to a large extent disappear.

As to the extent home herds may be affected by tuberculosis there is little means of definitely ascertaining, but it is to be feared from facts that have become well known that it is more widely prevalent than may be imagined. A return was issued in the end of January showing the number of carcases seized during the year ended March 25th, 1893, by medical officers of health and inspectors of nuisances in England and Wales. Altogether 3,322 were seized during the year, 382 by London sanitary authorities, 2,779 by town councils and county boroughs, 124 by the town councils of other boroughs, twenty-two by local boards, and fifteen by rural sanitary authorities. Of the total number 499 were condemned, of which 155 were the carcases of animals which had suffered from tuberculosis. Of the widespread existence of the disease in other countries there can be no doubt.—*Mark Lane Express.*

THE TOXIC PROPERTIES OF ADDERS' BLOOD.

HE late Professor Robin, in his dictionary, gives the following definition of *Couleuvre* (adder): *serpent dépourvu de glandes et de crotchets mobiles à venin.* Long ago Fontana first showed that the common adder supports with impunity

repeated bites of the viper or the subcutaneous inoculation of its venom. MM. Phisalix and Bertrand have recently (Academie des Sciences, January 8th, 1894), conducted inquiries into the cause of this remarkable immunity. These observers have studied the toxicity of the blood of two species of adder commonly met with in France—the *Couleuvre à collier* and the *Couleuvre viperine*. The blood, collected with antiseptic precautions from the heart of the slightly-chloroformed ophidians, was injected into guinea-pigs either at once or after being kept in a cool place for twenty-four hours, the serum only being utilised in the latter case. The result was always uniform and differed in no particular from the results obtained from the inoculation of echidnine (venom of viper), viz., hypothermia, progressive paresis ending in collapse without loss of sensation, weakening of the heart beats, and generalised vaso-dilatation with visceral congestions and ecchymoses. There exist, therefore, in the blood of the adder poisonous principles analogous to echidnine, insoluble, like the latter, in alcohol, and very adherent to precipitates. In order to determine the origin of these principles, organic extracts were prepared from the liver, pancreas, spleen, thymus, thyroid body, and salivary glands (superior labial glands) of each of three adders; the viscera were separately pounded in equal parts of water and glycerine, and allowed to macerate for twenty-four hours. Introduced into the peritoneal cavity of guinea-pigs, all these matters, with the exception of the extract of the salivary glands, were found to be inoffensive. The salivary extract was highly active. Taking into account the smallness of these glands, it is seen that their secretion must be more virulent, more especially as no reservoir exists, as in the viper. The poisonous symptoms determined by inoculation of this gland-product were identical in character and severity with those provoked by the blood and serum of the same animals. The alcoholic extract was inactive. It is evident that the immunity enjoyed by the adder in respect of the viper's venom (echidnine) is due to the fact that the continual internal secretion of an analogous poison by the superior labial glands constitutes an auto-inoculation which is protective.

The importance of this discovery is great, seeing that we are only beginning to become alive to the immense importance to the system of the internal, *i.e.*, reabsorbed secretion of such bodies as the thyroid, thymus, pancreas, etc.—*Lancet.*

THE ACTION OF TETANUS ANTITOXINE.

In the *Deutsche Medicinische Wochenschrift* (No. 3), Professor Buchner discusses the question whether or not the tetanus antitoxine in blood serum acts by decomposing the tetanus poison. He comes to the conclusion that this decomposing action does not occur, and that the effect of the antitoxine is rather to be referred to its power of causing immunity. He prepared a mixture of tetanus poison and antitoxine in such proportions that its effect when injected into white mice was *nil*. He then, with a similar mixture, injected guinea-pigs, which are more susceptible to tetanus than white mice, with the result that they showed distinct symptoms of the disorder; thus proving that in the mixture of poison and antitoxine the former was not decomposed by the latter, and that the two substances do not act on one another, but that both separately affect the animal organism. The same result was obtained when the mixture was allowed to stand some time before use, so as to give the antitoxine an opportunity of decomposing the poison, if that were possible. The explanation of the action of the antitoxine appears to be that it makes insusceptible to the poison those parts of the organism which, being susceptible to tetanus, have not yet been attacked. Professor Buchner is further of opinion that the antitoxine is not a product of the reaction of the organism to the poison, but is a bacterial product

closely allied in composition to the poison. Time, of course, and more practical work with its tabulated results are required to properly test such theories.

THE NATIVE TREATMENT OF CATTLE DISEASES IN INDIA.

TRANSLATED FROM THE TAMIL BY VETERINARY-CAPTAIN J. MILLS, PRINCIPAL BOMBAY VETERINARY COLLEGE.

(Continued from page 104.*)*

Pannikoravan (Malignant Sore Throat).

Symptoms.

The throat will be choked; there will be a grunting sound, dribbling of saliva from the mouth, and water will be flowing from the eyes and nose.

Treatment.

Thotheevalai vair (*Solanum trilobatum*), roots of.
Kandangatheri (*Solanum jacquini*).

Grind the two together, and take a quantity about the size of a lime fruit. Take the following other ingredients:—

Sitharathai (*Alpinia chinensis*).
Tippili (*Chavica roxburghii*).
Vasamboo (*Acorus calamus*).
Poondoo (*Allium sativum*).

Take a certain quantity of each of them, powder well, mix with the foregoing preparation, and give in the juice of the leaves of Muruckay elai (*Moringa pterygosperma*).

Yeri poochie (Disease of the Omasum.)

The animal will appear exhausted. It will not graze nor take any food, and will keep its back arched.

Treatment.

Omum (*Ptychotis ajowan*).
Vasamboo (*Acorus calaus*).
Yerookay (*Caloptropis gigantea*).

Grind these well in a mortar and give internally. If no cure is effected, give the flowers and flowering tops of *Caloptropis gigantea* with one or two tender leaves.

Musalkanda Vally (Gid or Turnsick).

Symptoms.

The animal will be shivering. It will fall down often; there will be great trembling and kicking with the limbs; the eyes will be in a rotatory motion, and the dung will be dry and compressed.

Treatment.

Give pig's ghee with cotton internally.

Kudalpaduvan (Hæmaturia).

Symptoms.

Purging with excess blood. The urine also will be mixed with blood.

Treatment.

Take two measures of the juice of the plant Kovathandoo (*Coccinia indica*), mix with two measures of butter-milk and give internally for two days.

Mar novoo (Chest pain).

Treatment.

Varagoo rice (*Panicum miliaceum*).
Panny kodel (Pig's bowels).

Take one measure of Varagoo rice and a pig's bowels and boil well at night. Early in the morning give the animal a ball about the size of a wood-apple. Continue this for three or four days.

Every day after giving the ball, let the animal graze a little. After an hour or so the animal should be watered. From the fourth day, the animal must be forced to swim in water for three days, two hours a day.

Vadam (Paralysis).

Perundai (*Vitis quadrangularis*).
Nochu (*Vitex negundo*).
Yeroockai (*Calotropis gigantea*).
Kuppamani (*Acalypha indica*).
Velooparuti (*Dæmea extensa*).

Take equal proportions of the juice of the above plants, mix well with a cocoanut size of each of cow-dung ash and sheep's dung, and with five pollems of Vasamboo (*Acorus calamus*). Boil the whole and apply the mixture so prepared to all the affected parts for three days, both morning and evening.

Vayarookalichal (Diarrhœa).

Extract juice from the leaves of Eloopay (*Bassia longifolia*), mix with water used for washing rice and give.

Rattakadoopoo (Dysentery).

Thennagurumbai (young cocoanut).
Pana vellum (Palm sugar).
Vengayam (*Allium cepa*).

Make a ball of these substances and give to the animal. Water must be given after the medicine. It is better to give water after the patient has had a little straw.

Dead Calf, treatment for the removal of, from the mother's womb.

Keela nelli (*Phyllanthus niruri*).
Yelumichay (*Citrus limonum*).

Grind well the roots of these two plants, mix with gingelly oil, and give to the cow. The calf will at once come out.

Medicine for animals weakened by poisons.

Take a quantity of castor beans in the green state, dry them gently by sun's heat, macerate well and extract a measure of juice. Add this to two measures of butter-milk and give. Continue this for three days.

Punnoo (Sores).

Take a small quantity of the root of Ponnu sattai (*Sida acuta*), grind well mix about a lime-size of this with goat's milk and give internally.

External Application.

Mavalingam elai (*Crataeva nurvala*), leaves of.
Perangurandai elai (*Cookia punctata*) do.

Grind the two together and apply to the parts affected.

Besides the above, tie around the neck of the animal a "Kottan kodi."

A cow that does not allow her calf to suck, treatment for.

A man should go about 4 o'clock in the morning, (when the morning cock crows), to the place where the washerman washes his clothes, and get a little soil from under the washing-stone. It should be mixed with milk and applied all over the body of the cow. The soil should then be wiped away with a cloth of a woman who menstruates. Continue this for three days.

A cow that does not allow her calf to come near, treatment for.

Kundoomani (*Abrus precatorias*).
Kuppamani (*Acalypha indica*).
Othamani (*Dæmea extensa*).

Take about an ollock of juice from each of the three drugs, mix with either butter-milk or toddy and give.

Nassium (medicine for nostrils).
Poondoo (*Allium sativum*).
Vasamboo (*Acorus calamus*).

Grind these a little and put drops in each nostril.

Cracked hoofs, treatment for.

Kazhichi elai (*Cæapenia bonduallа*).
Nalla yennai (Gingelly oil).

Take a quantity of the juice of the above-mentioned plant, add an equal quantity of gingelly oil and give internally.

In addition to this, pluck five leaves of Adundum elai (*Capparis horrida*) with the mouth and give them to the animal. Continue this for three days.

Maggots in the foot, treatment for.

1. Pull out the plant Jhondoo (*Bryoni grandis*), keep it on another plant in such a way that its roots may face upwards.

2. Pull out the plant Seppoo nevungu (*Indigofera enneaphylla*), and after praying to the sun throw it on another plant in the manner above described. The plants should be so removed from the ground that none of their rootlets may be broken.

To increase the flow of milk.

Take a piece of human skull, powder it well and mix with the juice of Sonnancani (*Illesebrum sessile*) and give it to the cow.

How to tame a vicious animal.

Take the following ingredients :—

Ooppoo (Salt, common).
Manjal (*Curcuma longa*).
Musalai elai (*Sida acuta*), leaves of.

Grind the three together in warm water, and give.

Do not give water for five days.

How to strengthen a weak animal.

Take gingelly oil, 10 pollems.
Eggs, 8 in number.
Pepper, 2 pollems.

Allow the animal to swim in water for two or three hours, and while standing in the water give the above medicine as a drench. Continue this for three days.

PRAYER.

Success, wisdom, wealth and faith will be the reward of those who worship the god Ganapathi, the son of Hroonasor.*

* Is another name for Mâheswara.

THE USE OF MALLEIN IN PARIS.

At one of the most recent meetings of the Société Centrale de Médecine Vétérinaire, M. Laquerriere referred to the great value of mallein as an *agent révèlateur* of Glanders, and stated that they had frequently shown the considerable advantages inspectors of horse markets might derive from its employment. Horses presenting the slightest suspicious symptom could be seized and in twenty-four to forty-eight hours their fate would be decided; for if they reacted to the mallein they would be slaughtered, and if they did not they were restored to their owners without having suffered any serious damage. Before the introduction of this agent, such horses would not have been seized and condemned, and they would have lived and continued to spread the infection for perhaps months or years. He alluded to the results he had obtained from the employment of mallein among the horses of a public company styled *La Concorde*, which had a stud numbering 141, and of these 125 were recognised, certainly and indisputably, as glandered, by this means, and by no other. Though this discovery was the ruin of the Company, yet by it a large centre of infection was abolished. Several other examples are given, from which it is evident that Government should take in hand the suppression of glanders by the employment of mallein, which would contribute powerfully to the eradication of the disease.

From numerous personal observations during 1893, in which this veterinarian had extensively resorted to mallein to prove the existence of glanders in horses, and which he laid before the same meeting, he offered the following *resumé* and conclusions:

1. Thirty-four horses had been submitted to the mallein test, 18 separately and 16 at one time;

2. Fourteen of these horses gave no reaction and were sent to work; ten were still under observation;

3. Seven other of these horses, which did not react to the mallein, were killed and at their autopsy they were found to be free from all lesions of glanders, including two which were supposed to be affected with farcy;

4. One of the animals, which did not react, died a few days after the test was applied, and was found to have no lesions of glanders;

5. Seven horses having reacted in the triple sense—hyperthermia, œdema *loco operandi*, and general reaction—were sacrificed, and at their autopsy the most distinct evidence of glanders was revealed;

6. Of three horses which reacted feebly to mallein, two had the local œdema in a painful and persistent form; the third—which had a temperature of 40° Cent.—need not be further alluded to, as the mallein cannot be usefully employed with such an elevation of temperature;

7. Two horses merit particular notice. One gave a reaction of nearly two degrees, the local and general reaction being equally evident. Auto-inoculation and inoculation of dogs with the nasal discharge gave no result, but the mallein injection caused this discharge to promptly disappear. The other horse gave a thermic reaction of 1·7°, and there was local œdema, but only slight general reaction. Inoculation of dogs with the nasal discharge was negative, but the discharge soon ceased, and from that time the animal has given every indication of good health.

In these two horses, then, the mallein did not indicate the existence of glanders, but rather of the presence of strangles, and if it were not premature to draw conclusions from two cases only, M. Laquerriere thought that mallein is a revealer of strangles as well as glanders, while it cures the former. He added that, excluding exceptional cases, and leaving strangles out of view, he believed as a *definitive conclusion* that mallein is really the touchstone, the revealing agent *par excellence*, for latent (or perhaps it would be better to say

"occult") glanders, and that not only should its employment be more vulgarised, but its use ought to be made obligatory in every suspicious case and upon all the horses in a stable or establishment in which a glandered animal has lived.

THE FILARIA IMMITIS IN FIJI.

It having been stated in the *Lancet*, with regard to some *Filariæ immitis* contained in a dog's heart from Fiji, that these worms give rise to no symptoms except cough, and do not appear to shorten life, a correspondent writes to say that his experience points to the opposite conclusion. "During a residence of seventeen years in that colony, I have owned many dogs, and have had some hundreds of others under observation. . . . The filaria immitis is the bane of the canine race in the eastern tracts of Asia, including Japan and parts of India. I have examined a great number of dogs *post-mortem*, and can endorse the statement that the worms sometimes attain a length of five inches; but I have invariably found that they bring about the death of their host in the course of from six months to two years or so from the date of the earliest noticeable signs of their presence in the animal.

"These signs are a peculiar barking cough, which ends in a spasmodic hawking-up of frothy mucous, and sometimes in vomiting, progressive emaciation, distressing dyspnœa, and syncope. The cough is instantly produced by patting the dog over either side of the thorax. Old residents in Fiji are perfectly familiar with the symptoms produced by the filariæ, and it is a circumstance of everyday familiarity to hear it said, 'Oh, poor so-and-so is doomed; did you not hear him cough?' It is, indeed, quite pathognomonic; and excepting in one or two favoured localities, every dog in Fiji falls a victim sooner or later to these filariæ, unless its career be accidentally cut short by some violence or intercurrent disorder; but it is somewhat strange that bitches resist longer than dogs. Not only the heart, but the great vessels, the veins especially, contain mature filariæ as a rule. It is my belief that the ova acquired by the fœtus from the blood of a pregnant bitch may prosper and develop after the birth of the pup, but the symptoms do not usually manifest themselves in puppies of less than six months old, though the baby filariæ are easily detected in the blood. It is quite rare to meet with a dog more than four years old which has been born in Fiji, and imported ones seldom survive their arrival more than two-and-a-half years."

A VETERINARY COLLEGE FOR IRELAND.

On January 29th, an influential depuation waited upon the Right Hon. the Chief Secretary for Ireland, for the purpose of explaining the necessity that exists for the establishment of a Veterinary College for Ireland. The following were present:—The Right Hon. C. T. Redington, C. J. Blake, Right Rev. Monsignor Molloy, Dr. C. J. Nixon, Professor Fitzgerald, F.T.C.D.; Rev. Dr. Haughton, F.T.C.D.;—Fowler, Sir Charles Cameron, M.D.; the President of the College of Physicians, Dr. Hamilton, Dr. Kidd, Dr. Creed Meredith, R.U.I.; Dr. M'Grath, R.U.I.; Dr. Thornley Stoker, Thomas Carroll, W. Field, M.P.

The Right Hon. Mr. Redington introduced the deputation, and briefly stated its objects, which had his large sympathy, because of the serious requirements of the country for such an institution.

Professor Fitzgerald read letters of regret for non-attendance from Lord Powerscourt, who was strongly in accord with the movement, Lord Rathdonnell, and Mr. Ussher Roberts, who strongly urged the desirability of the object.

Dr. C. J. NIXON, in explaining the necessity that existed for a Veterinary College in Ireland, pointed out that a very large proportion of the students of Veterinary Colleges in England and Scotland were Irishmen; that several attempts had been previously made to bring about the establishment of a Veterinary College in Ireland; that the Government had assisted largely in the foundation of a Veterinary College for England; that Scotland was provided with three schools of veterinary science; that Ireland with a larger live-stock population than Scotland, had no such institution; that not alone from the agriculturist's point of view, but in the interest of medical science and medical education generally, the establishment of a Veterinary College would confer large benefits on the country; that the existence of a Veterinary School in Ireland would mean a considerable improvement in the professional status of the veterinary practitioners of the country, who would be kept in touch with all improvements and advances in veterinary science; that at this college experiments of a valuable character in connection with agriculture might be carried on with the care and precision necessary for such work, and that the agriculture of the country—unfortunately its only great industry—imperatively required the establishment of such an institution; that the resources of the country were unequal to the emergency; that under the circumstances Ireland was obliged to ask the Government to help in this necessary work.

Mr. BLAKE briefly described the need of veterinary education for Ireland and the desirability of providing for young Irishmen in their own country an education that would be useful to themselves and to Ireland generally.

Mr. FOWLER stated the requirements of Ireland for a Veterinary College, because of the importance of the cattle-rearing and feeding industry; pointed out the large number of farm live stock now in Ireland; that cattle farming, whether it be on grazing lands or on arable farms, was at present the most important branch of farming. This being so, our cattle required to be kept in health and free from diseases of a contagious or infectious character.

Mr. WM. FIELD, M.P., on the part of the Irish Cattle Traders' Association, spoke in favour of the project. This association, of which he was president, had already wrought considerable improvement in the cattle industry of Ireland. It would continue its work of progress, and for this matter of a Veterinary College he would say the Cattle Traders' Association would give it a sympathetic and, if necessary, a practical support.

The Rev. Dr. HAUGHTON pointed out that the movement of working for a Veterinary College was not new to Ireland; that several times was he himself engaged in agitating for this useful work; that want of money, not want of will or energy, blocked the progress of the matter; that he now hoped the project would take a practical shape, and that funds would somehow be found for this most necessary work.

Mr. MORLEY, in reply, expressed his complete sympathy with the objects of the deputation. He was much impressed by the clear and full exposition given by Dr. Nixon and the practical remarks of other speakers; that, now, as heretofore, he desired to note the advance of education of all kinds. The present was, as members must know, an unfortunate time to ask for money, as he took it this was the object of the deputation which he had the pleasure to address, although with commendable modesty and consideration this demand was omitted from the scheme laid before him. The matter would be laid before those who were responsible for the finances of the country, and they might rest assured that as far as he could in every possible way he would endeavour to give practical effect to his desire to help in this matter. The deputation must not, however, be sanguine that immediate help would come.

Monsignor MOLLOY then thanked the Chief Secretary for the courteous and sympathetic way in which they had been received, and expressed a hope

that the years of office of the Right Hon. Mr. Morley should be marked by the concession of this great advantage to Ireland.

Since the above interview took place, the following correspondence has passed between the Chief Secretary for Ireland and Mr. C. J. Nixon, M.D. :—

IRISH OFFICE, WESTMINSTER, S.W.
February 19th, 1894.

DEAR DR. NIXON,—I have given full consideration to the views expressed by the influential deputation that waited on me in Dublin on the 30th ult. to advocate the establishment of a veterinary school of medicine in Ireland. I am now happy to be in a position to announce that the Government will be prepared to ask Parliament to authorise the allocation of a lump sum of £15,000 as a grant in aid towards the cost of acquiring suitable college buildings and fittings. The necessary steps will be taken upon the Government being satisfied that the initial proceedings are so far matured as to justify the advance.

I wish the project every success as being calculated in a marked way to promote a highly important public object,—Yours faithfully,

(Signed) JOHN MORLEY.

C. J. Nixon, Esq., M.D.

2, MERRION SQUARE, DUBLIN,
February 21st, 1894.

DEAR MR. MORLEY,—Your letter of to-day conveyed, indeed, good news. The deputation that waited upon you have reason to be grateful for the sympathetic interest which you have taken in what they with you consider a highly important public object.

No time will be lost in taking the necessary steps to put the project in such form as will enable the Government to allocate the proposed sum of £15,000 for the establishment of a Veterinary College in Ireland.—Yours faithfully,

(Signed) C. J. NIXON.

The Right Hon. J. Morley, M.P.

THE FITZWYGRAM PRIZE COMPETITION.

WE are requested to announce that Lieutenant-General Sir F. Fitzwygram offers three prizes of £50, £30, and £20, to be competed for by students who have gained the diploma of the Royal College of Veterinary Surgeons since the spring examination of 1893. The conditions will be much the same as for last year's competition.

THE INTERNATIONAL VETERINARY CONGRESS OF 1895.

THIS Congress will be held at Berne, Switzerland, on the occasion of the Swiss Agricultural Exhibition, which is to take place at that town. The organising Committee is composed of Veterinary-Colonel Potterat, Principal Veterinary Surgeon of the Swiss Army and Federal Commissioner on the Epizootic Committee, President; Professor Berdez, Director of the Berne Veterinary School, First Vice-President; Professor Hirzel, President of the Swiss Veterinary Society, Second Vice-President; Professor Noyer, Berne Veterinary School, Secretary; with Schindler, Veterinarian and National Councillor, Suter, Veterinarian and National Councillor, Gillard, Cantonal Veterinarian, Knüsel, Veterinarian and Member of the Sanitary Council, and Beretta, Veterinarian, as Members.

Army Veterinary Department.

Gazette, January 26th.

ARTILLERY VOLUNTEER CORPS. North Riding of Yorkshire (Western Division) Royal Artillery.—Veterinary-Lieutenant W. E. Laurence resigns his commission.

Veterinary-Lieutenant E. Taylor embarked for a tour of service in India on January 30th.

Veterinary-Lieutenant D. J. Barry has been transferred from Woolwich to York, for duty with the 6th Dragoon Guards.

Veterinary-Lieutenant C. B. Freeman has been transferred from Aldershot to Woolwich for duty.

Veterinary Lieutenant-Colonel F. Duck embarked on 17th February to take up the duties of Principal Veterinary officer in India to relieve Veterinary Lieutenant-Colonel W. A. Russell who has been ordered home.

Veterinary-Captains R. W. Burke and H. T. W. Mann embarked on the 24th February for service in India.

Veterinary Lieutenant-Colonel W. B. Walters has been placed on retired pay, 24th February.

Veterinary-Major C. Phillips has been promoted Veterinary Lieutenant-Colonel, and posted to Dublin as District Veterinary Officer in Ireland.

Veterinary Lieutenant-Colonel H. Thomson has been transferred from Dublin to Aldershot to take up the duties of District Veterinary Officer at that station.

Veterinary-Captain J. A. Braddell has been transferred from Limerick to Barlincallig for duty with 13th Hussars.

Veterinary-Lieutenant H. C. Harris has been transferred from Aldershot to Limerick.

Mr. F. S. H. Baldory, M.R.C.V.S., has received a commission as Veterinary-Lieutenant.

Veterinary-Lieutenant T. E. W. Lewis arrived from India on 19th Feb. on four months private leave of absence.

Obituary.

THE following deaths have been reported:—

W. Coe, Senr., M.R.C.V.S., Bury St. Edmunds,	graduated	1836.
W. R. Sherley, M.R.C.V.S., Twickenham, Middlesex,	„	1845.
J. Briggs, M.R.C.V.S., Selby, Yorkshire,	„	1852.
T. H. Ford, M.R.C.V.S., St. Johns, Antigua, W. Indies,	„	1863.

Jurisprudence.

VETERINARY SURGEONS' FEES.

AT the Shrewsbury County Court on February 6th, before Judge Harris Lea, Mr. W. E. Litt, a veterinary surgeon, of Shrewsbury, sued Richard Evans, butcher, of Belle Vue, to recover £2 1s. for professional attendance upon a mare. The mare was sent by defendant to a man named Mills to be broken in, and while with him it met with an accident. Mills sent for Mr. Litt, who attended the mare, and, according to the custom in such cases, sent his bill to Mr. Evans. For the defence it was denied that defendant was responsible, as he did not know of the accident until afterwards. His Honour said he

was of opinion that a horse-breaker was not responsible for accidents th might occur to a horse while it was being broken, and also that he was entitled to send for a veterinary surgeon if necessary. In such a case he would be liable for the consequences if he did not. He thought Mills should have informed defendant, and judgment was given for the plaintiff.

Proceedings of the Royal College of Veterinary Surgeons and Veterinary Medical Societies, etc.

ROYAL COLLEGE OF VETERINARY SURGEONS.

QUARTERLY MEETING OF COUNCIL, HELD JANUARY 24TH, 1894.

F. W. WRAGG, Esq., President, in the chair.

Present:—Professors Edgar, McFadyean, Penberthy, Walley, Williams; Veterinary-Colonel Oliphant; Veterinary-Captain Raymond; Messrs. Barford, Faulkner, Fraser, Hartley, Hunter, Hunting, Kidd, Mason, Mulvey, Peele, J. F. Simpson, Thompson, Trigger, Thatcher (Solicitor), A. W. Hill (Secretary).

Presentations to the Library.

The SECRETARY announced the following donations to the Library:—"Report of the Sanitary Department at Cairo;" "Calendar of the Royal College of Surgeons, England"; "Horses and Stables," 4th edition, by General Sir F. Fitzwygram; and "Report on Horses' Surra," vol. i., from Bombay.

Thanks were accorded to the donors.

Letters of thanks were read from Dr. Fleming, C.B., Professor Macqueen, and Mr. Duguid on their appointment as examiners for the Fellowship Degree.

A letter was read from Mr. Awde, of Stockton-on-Tees, on behalf of the South Durham and North Yorkshire Veterinary Medical Society, drawing the attention of the Council to the notice of the Board of Inland Revenue with regard to the use of methylated spirit by veterinary surgeons, and also to the fact that no code of ethics with reference to members of the profession guilty of disgraceful conduct in a professional respect had yet been drawn up.

Mr. PEELE said he also had been written to on these matters, and asked to bring them before the Council.

Mr. SIMPSON pointed out that in the use of methylated spirit by veterinary surgeons as internal and external medicines, he had moved for a committee, which was granted by the Council. That committee made certain representations to the Board of Inland Revenue, and the reply was similar in every respect to that given to individuals who had made application to them. He would now move—"That a deputation wait on the authorities of the Inland Revenue, and make such representations as they may deem advisable in the interests of the veterinary profession."

Mr. PEELE seconded the motion, which was agreed to; the deputation to consist of the President, Mr. Simpson, and Mr. Peele.

Mr. HUNTING suggested that the Secretary should write to the Society with regard to the course the Council had adopted. Agreed.

A Code of Ethics.

Professor MCFADYEAN presumed that the powers of the Council with regard to unprofessional and disgraceful conduct were much the same as those of the General Medical Council. They might at any rate begin with some of the more

flagrant cases, and work downwards until they found it necessary to define cases in which there might be some difference of opinion.

Professor PENBERTHY was extremely anxious that this matter should take some tangible form. It was asserted that they had not yet defined what the word "disgraceful" meant, and he thought it was quite time that they should do so.

Mr. THATCHER (Solicitor) pointed out that if any code of ethics was drawn up, it should be sufficiently elastic to include any offence.

Professor WALLEY thought it would be the most difficult thing in the world to draw up any such code.

Mr. HUNTING pointed out that this was not the first time this matter had been considered by the Council. It had already been decided that it was unadvisable to frame this code of ethics.

Mr. SIMPSON suggested that, as the matter was coming before the Registration Committee at their next meeting, it would be best to postpone it. Agreed to.

Resignations.

The SECRETARY read letters from Veterinary-Captain Rutherford and Veterinary-Colonel Duck, resigning their positions as Examiners.

On the motion of Mr. MULVEY, seconded by Mr. TRIGGER, it was agreed that the resignations be accepted with regret, and that advertisements be inserted in the usual way for the appointment of their successors.

Letter from Mr. Howard.

The SECRETARY read a letter from Mr. Howard, of Newbury, with regard to the new rules for the Fellowship Examination. He (the Secretary) said he had replied, stating that he had nothing to add to his previous communications.

Amalgamation of Dinners.

The SECRETARY read a letter from the chairman of the Provisional Committee of the National Veterinary Association, containing a resolution of that committee, asking whether the Royal College of Veterinary Surgeons would allow their dinner to be amalgamated with that of the Society this year.

Professor WALLEY thought the suggestion a very good one.

Mr. TRIGGER said that of course the Chairman of the College would be president at the dinner.

Mr. SIMPSON suggested that the President of the Association might be vice-chairman.

Professor WALLEY sugested that the matter might be referred to a small committee. He would therefore move—"That the annual dinner be a joint dinner of the Royal Committee and the National Veterinary Association, and that a committee be formed to act with the Provisional Committee of the National Veterinary Association to carry out this matter—the committee to be composed of Mr. Hunting (President of the National Veterinary Association), Veterinary-Captain Raymond, and the President of the Royal College."

Agreed to.

Finance Committee.

The SECRETARY read the report, which showed there was a balance of £1,150 in the bank in favour of the College. The Committee recommended that cheques be drawn to meet the current liabilities, and that the sum of £500 be invested in Consols; also that the Treasurer be empowered to draw cheques not exceeding £40 in current quarter, for Poor Rate and Petty Cash, etc.

Mr. MULVEY asked whether the suggestion was that £500 be invested in consols.

The PRESIDENT said it was that £500 worth of Consols be bought.

Mr. J. F. SIMPSON moved the adoption of the Report.

Mr. MASON seconded the resolution.

Mr. MULVEY thought it was folly to have so much money in the bank earning no interest. He would propose that not less than £800 be invested in Consols.

Mr. TRIGGER seconded the amendment.

The amendment was then put from the chair and lost, and the original resolution for the adoption of the Report carried.

The Registration Committee.

The SECRETARY read a report from the Solicitor, from which it appeared that two prosecutions had taken place, both of which were followed by conviction and fine. The Solicitor also reported the result of inquiries in other cases, in each of which prosecutions were recommended. The Committee recommended the restoration of certain names to the Register, and also to issue the usual cautionary notices in several cases.

Mr. J. F. SIMPSON moved that the recommendation with regard to the prosecutions be adopted, and that the seal of the College be affixed to the authorities.

Mr. FRASER seconded the resolution, which was agreed to.

On the motion of Professor WALLEY, seconded by Mr. HARTLEY, the Report was received and adopted.

Examinations Committee.

The SECRETARY read the Report, which recommended that in future the Examiners in adjudicating the marks should take into consideration both the written papers and the oral examination.

Professor WALLEY desired to raise the question as to the examinations in April. Unfortunately no arrangement could be come to between the London School and the Scotch School as to the opening of the Colleges simultaneously in September. The result was that as the Scotch Colleges had opened early in September, and the London College had not done so, the Scotch Colleges would be ready with their students a month before the London one. Their students would be now ready in April, and yet they would have to wait until the usual date in May.

Mr. HUNTING protested against a discussion being raised on this point, as it was not on the agenda.

The PRESIDENT said that Professor Walley had previously spoken to him on the subject, and he had told him that he would permit it to be mentioned when the report of the Examination Committee came up.

Professor WILLIAMS said there was a clear understanding that if they opened in September their examinations were to come on early in April, so that the students might have some spring practice.

Professor WALLEY said it was necessary that this matter should be settled.

Mr. HUNTING said he would propose that, as this subject was of such a controversial nature, it should be adjourned until a future meeting.

Mr. PEELE seconded the motion, which was put to the meeting, and declared to be lost.

Mr. TRIGGER said it seemed to him that they had no option in the matter. He was sorry for the inconvenience the Scotch schools were put to in this matter. They would have to hold their examinations in May this time, and hoped that some better arrangement could be come to in the future. He would now move that the next examination be held in May, at a date to be fixed at the next Council meeting, but that the Scotch oral examinations take precedence of the London oral examinations.

Professor EDGAR seconded the resolution, which was declared to be carried.

On the motion of Mr. TRIGGER, seconded by Mr. MULVEY, the report of the committee was adopted.

Library and Museum Committee.

The SECRETARY read the report, which stated that the consideration of the rules had been adjourned to the next meeting, and that a list be made of all books in the library not catalogued.

Mr. MULVEY moved the adoption of the report.

Mr. HARTLEY seconded the motion, which was agreed to.

Bye-Laws Committee.

The SECRETARY announced that this committee had not yet sent in a report.

Committee in re *Colonial Practitioners.*

The SECRETARY read the report recommending the Council to reappoint the committee to draw up a letter to the Colonial Office embodying the suggestions in the printed form which the Secretary had issued, so far as the Crown colonies are concerned.

Veterinary-Captain RAYMOND move that the report be received and adopted.

Mr. TRIGGER seconded the motion, which was agreed to.

Court of Examiners.

The SECRETARY read the report of the Court of Examiners, from which it appeared that at the final examination held in London 40 candidates were examined, of whom 24 passed and 16 were rejected; in the "B" examination 27 were examined, of whom 19 passed and 8 were rejected; and in the "A" examination 40 were examined, of whom 24 passed and 16 were rejected. In the written examination, held in Glasgow simultaneously with that in London, viz., on the 11th of December, 52 were examined in Scotland and 175 in Edinburgh. The examiners in class "A" reported that the Christmas examinations were scarcely up to the standard of last year; 56 passed and 44 were rejected, and few candidates gained distinction.

The SECRETARY was proceeding to read the reports of the delegates appointed to attend the various examinations, when——

Mr. HUNTING protested that they should not be read to the Council, but should be considered by the Examination Committee.

Mr. HARTLEY thought that they should be read before the Council.

On the motion of Professor MCFADYEAN it was agreed to defer the reports of the delegates to the next meeting of the Examination Committee, and that the report of the Court of Examiners should also be referred to that committee.

Report of Examiners for Fellowship Degree.

The SECRETARY read the report, which stated that three candidates had offered themselves for examination, one of whom had passed.

Mr. HUNTING considered that the report was very meagre indeed.

Mr. MULVEY said the report had been before the Examination Committee.

On the motion of Mr. TRIGGER, seconded by Mr. MULVEY, the report was adopted.

Mr. HUNTING moved the following resolution, of which he had given notice:—"That this Council regrets that the word 'farrier' was not used as the sole designation of a horse-shoer in the scheme of registration adopted by the Worshipful Company of Farriers." He said he believed this was a very important resolution. They were always hearing complaints in the profession against other people usurping their titles. It was a very frequent matter in

the country that the veterinary surgeon was known as a farrier. They expressed their objection to that, but they made no effort to get rid of it, and his object in moving this resolution was not only to get the recognition of the evil, but its removal. The word "farrier" was now used with two or three different significations, and was it not worth their while to try and get it properly used by the public? They might try and do away with the word farrier altogether, and substitute *shoeing-smith*. If they could not do that, let them so use the word that the public might know exactly what it meant. When it was applied to the veterinary surgeon it should be pointed out that that was wrong. As to the Farriers' Company's scheme, he might say it was now in operation nearly all over the kingdom, in County Councils and at agricultural shows, and he thought it would be distinctly to their advantage if the word "farrier" was not used as the sole designation for a horse-shoer, but that some definite meaning should be assigned to it.

Mr. MULVEY seconded the resolution. He believed thoroughly that if the term farrier had been fixed to the shoeing-smith at the time that this matter of the registration was started, they would by this time have got rid altogether of its use as a designation for the veterinary surgeon.

Mr. TRIGGER said that whilst thoroughly agreeing with the spirit of Mr. Hunting's resolution, he thought that it would be a very dangerous one for the Council to pass at the present time. He thought it came some years too soon.

The resolution was then put to the meeting, when two voted in its favour and nine against. It was therefore declared to be lost.

Resolution by Mr. Kidd.

Mr. H. KIDD moved the following resolution, of which he had given notice:—"That a deputation be appointed to wait on the Right Hon. H. Gardner, M.P., Minister of Agriculture, with reference to the claims of qualified veterinary surgeons for appointments as inspectors under the Contagious Diseases (Animals) Act." He said he thought the present a very favourable time for bringing the matter before the meeting, on account of the resignation which had taken place on the Board of Agriculture in the Veterinary Department. What he was chiefly concerned with—and he trusted the Council would be concerned with—was the treatment that the veterinary inspectors received at the hands of the Board of Agriculture. At present a local inspector, as soon as he had made a report that disease existed, had to make a *post-mortem* and send the lungs to London. That seemed a curious proceeding, as putrefactive changes quickly took place. Surely a qualified man was quite able to say whether pleuro-pneumonia existed or not before the viscera was sent to London. It might be said that the efforts of the Board had been successful, for pleuro-pneumonia had now been stamped out; but they were surely entitled to look to efficiency first and economy next. A more difficult matter they now had to deal with was that of swine fever, with which somewhat the same process was gone through. Cases of swine fever were even more difficult than pleuro-pneumonia cases, and he knew of instances where animals had been condemned for swine fever which were not suffering from that disease at all. And, again, in the future they would have to deal with tuberculosis. He wished for this deputation in order that they might lay before the Minister for Agriculture their opinion that the travelling inspectors should be qualified veterinary surgeons, and not tailors or clerks, who knew nothing whatever about stock and their diseases. He did not wish in this matter by any means to supersede the local inspector.

Veterinary-Captain RAYMOND seconded the resolution.

PROFESSOR WALLEY could not see what good this deputation could do. He thought veterinary surgeons might be employed more often than they were in

this matter, but at present the travelling inspectors to his knowledge were nothing more than policemen, who saw the slaughter, etc., carried out.

PROFESSOR PENBERTHY said he should like to point out one little difficulty. He thought that veterinary surgeons were now appointed in every case where they were needed; and if the travelling inspectors were veterinary surgeons, he feared they would be taking some of the work out of the hands of the local inspectors. They would be the superior officers of the department, and would have to see to the case.

Mr. TRIGGER thought that if the travelling inspectors were veterinary surgeons, the local man would certainly be in a worse position than now.

Mr. KIDD said that his idea was that the travelling inspector should consult with the local inspector on a case, and if they were agreed that disease existed, then the whole matter should be left for the local man to carry out.

Mr. TRIGGER pointed out that that would be paying two instead of one.

Professor MCFADYEAN said he did not see that this change would be to the advantage of the profession.

Mr. HUNTING thought the matter was well worthy of their consideration. It was not the right thing that the Board of Agriculture, whose chief work was on veterinary matters, should give just double to some of its clerks than they did to their veterinary inspectors. In cases in the country the inspector who went down usually employed a butcher, who did the killing, etc., and he and the butcher together determined whether the animal was fit for food or not. If the Board of Agriculture went on as they were at present, the veterinary profession would soon be put in the background, and they should do what they could to protest against it.

Professor EDGAR said that, as the matter stood, he was strongly opposed to the resolution, as he believed the Board of Agriculture had acted wisely and advisedly towards its inspectors, who had served them faithfully throughout the country for a long period.

Mr. TRIGGER said he would suggest that a sub-committee be appointed to consider the matter, and to draw up a memorial to the Board of Agriculture on the subject. Perhaps Mr. Kidd would amend his resolution to that effect.

Mr. KIDD said he would gladly do so.

Veterinary-Captain RAYMOND, as seconder of Mr. Kidd's resolution, said he would agree to the alteration suggested.

Agreed to.

The committee was then appointed, to consist of Mr. Kidd, Professor Penberthy, and Professor Edgar.

Professor MCFADYEAN asked when the committee were to report.

The PRESIDENT said the committee would frame a report to be brought up at the next meeting in April.

SPECIAL MEETING.

F. W. WRAGG, Esq., President, in the Chair.

Present:—Professors Edgar, McFadyean, Penberthy, Shave, Walley, and Williams; Veterinary-Colonel Oliphant; Veterinary-Captain Raymond; Messrs. Faulkner, Hunting, Hunter, Kidd, Mason, Mulvey, Peele, Simpson, Thompson, Trigger, Thatcher (Solicitor), and A. W. Hill (Secretary).

Resolution by Mr. Simpson.

Mr. SIMPSON moved the following resolution:—"That no student shall be entitled to receive his diploma or have his name entered on the Register of the Royal College until he has completed his twenty-first year, but he may present himself for his final examination, provided he would complete his twenty-first before the date of the next examination." He said that under the

old regulations a student could not only present himself for examination, but could receive a diploma, provided he had entered on his twentieth year. That was considered by the Council very properly as being too young an age at which to entrust students with the diploma, because practically at nineteen he could be admitted a member of the profession. If the Council approved of the alteration in the regulations which he now proposed, they would not be inflicting an injustice upon anybody, and would not be admitting younger men into the profession than they had been since the previous alterations were made; they were admitting them practically at the same age, twenty-one. And then they had to consider the fact that very recently they had been making regulations which pressed very heavily upon members of the profession; and if they bore in mind the fact that the ranks of the Veterinary Colleges were recruited from the sons of their own members, he thought it was only right that in the event of any hardship being inflicted on members of their profession, they should do their best without materially altering the regulations of the College, to set them right, and by making the alteration he had suggested, they were not making any material alteration in the regulations of the College.

Professor McFADYEAN seconded the resolution.

Mr. MULVEY supported the resolution. He had been converted on this question during his Presidentship, during which period two cases of very great hardship had come up.

Professor WALLEY also desired to support the resolution.

Mr. TRIGGER had seen no reason to alter his opinions on this matter. They must have some hard and fast line.

Professor SHAVE said he quite agreed with the principle of the resolution.

Professor PENBERTHY was glad that they had an opportunity here of modifying any hardships. He, however, deprecated the tendency to get very young students—a tendency which had grown very much of late years.

Mr. SIMPSON said that, with regard to the London school, no student could enter until he had attained the age of sixteen, so that there was a guarantee against very young students going up for the examination.

Mr. HUNTING said that apparently the only argument in favour of this change was individual hardship, and they would have the same matter cropping up again when it was discovered that there was a tremendous hardship in the case of a man who would not be twenty-one until two days after the next examination.

The resolution was then put and carried, with only three dissentients.

Resolution by Mr. Mulvey.

Mr. MULVEY moved the following resolution:

"To substitute for Bye-laws Nos. 14 and 18, page 73—

"That no student shall be eligible for the second examination until he has attended one session of not less than thirty weeks, exclusive of holidays, after passing the first examination.

"That no student shall be eligible for the final examination until he has attended one session of not less than thirty weeks, exclusive of holidays, after passing the second examination."

Professor McFADYEAN asked whether it would not be better to insert "Third" instead of "Final," as they were now going to have a fourth examination."

Mr. MULVEY said that with the permission of the Council he would make that alteration.

Veterinary-Captain RAYMOND seconded the resolution.

Professor WALLEY asked whether if this resolution was passed it would not entirely do away with his which he was to propose subsequently.

Mr. HUNTING said of course that would be so.

Professor WALLEY then asked leave to move his resolution as an amendment.

The PRESIDENT said that might be so. Perhaps Mr. Mulvey would move his separately.

Mr. MULVEY then moved—"That no student shall be eligible for the second examination until he has attended one session of not less than thirty weeks, exclusive of holidays, after passing the first examination."

Professor WALLEY moved as an amendment—"That no student shall be eligible for the second examination until he has attended two sessions of not less than thirty weeks each, exclusive of holidays." He said that under that resolution a man could not go up for his second examination under two years, but he was not kept hanging on by rejection after rejection in the first, and then again a whole year before being allowed to be examined for the second.

Mr. HUNTER said he had very much pleasure in seconding the amendment. He could not see why a student should be penalised to the extent of twelve months because he had failed in one examination.

Professor EDGAR supported Mr. Mulvey's resolution.

Mr. SIMPSON said at present he felt inclined to support the amendment, but he should like to know whether it was possible for a rejected student to be instructed in "A" and "B" at the same time. If that was so he could understand that it would be extremely difficult to instruct a student in both classes at one and the same time. If a satisfactory answer were given to that question he hoped they might be unanimous on the matter, and perhaps Mr. Mulvey might see his way to withdraw his resolution.

Professor WALLEY said that the principal of the school had to certify that the student had attended the necessary lectures.

Professor EDGAR thought it was a sign that Class A and Class B men were lamentably underworked if they could take up both of them simultaneously.

Professor SHAVE supported Professor Walley's amendment. He thought in exceptional cases men were rejected at the examinations, although they might have sufficient knowledge of all the subjects. They were often rejected through nervousness when they were quite in a position to go on with Class B work.

Mr. HUNTING asked whether they were to legislate for the exceptional cases or for the majority. The suggestion was that because one or two persons were rejected who were competent to pass that this new arrangement should be made for them. Mr. Mulvey's motion carried out what had been done by the College for forty or fifty years. The only addition was that he had put in the thirty weeks' session. The motion simply provided that there should be an orderly curriculum; the other arrangement was that a man could, if he liked, remain six years in class, and then pass all the others if he liked.

Professor Walley's amendment was then put to the meeting, and declared to be carried, 8 voting in its favour and 7 against.

Mr. MULVEY said that he would now withdraw his other resolution.

Professor WALLEY moved—"That no student shall be eligible for his third examination until he has attended three sessions of not less than thirty weeks, exclusive of holidays."

Professor WILLIAMS seconded the motion.

Mr. HUNTING proposed as an amendment—"That no student shall be eligible for the third examination until he has attended one session of not less than thirty weeks, exclusive of holidays, after passing the second examination."

Mr. MASON seconded the amendment.

The amendment was then put and lost, and the original motion was carried.

Professor WALLEY moved—"That no student shall be eligible for the fourth examination until he has attended four sessions of not less than thirty weeks, exclusive of holidays."

Mr. SIMPSON seconded the motion.

Mr. HUNTING moved as an amendment—"That no student shall be eligible for the fourth examination until he has attended one session of not less than thirty weeks, exclusive of holidays, after passing the third examination."

Veterinary-Captain RAYMOND seconded the amendment.

The amendment was then put to the meeting and lost, five voting in its favour and nine against.

The original motion was then carried.

Resolution by Professor Edgar.

Professor EDGAR moved for alteration of system of marking at the examination by substituting numbers for terms "very good," "good," "sufficient," and "bad."

Mr. SIMPSON seconded the motion, which was agreed to.

A vote of thanks to the President closed the meeting.

SPECIAL MEETING OF COUNCIL HELD FEBRUARY 5TH, 1894.

F. W. WRAGG, Esq., President, in the chair.

Present:—Professors McFadyean, Penberthy, Shave; Veterinary-Captain Raymond; Messrs. Hunting, Lawson, Simpson, Thatcher (Solicitor), and A. W. Hill (Secretary).

The SECRETARY read the notice convening the meeting, also the minutes of the last special meeting, held on the 24th January.

Mr. J. F. SIMPSON: I beg to move that the minutes be confirmed.

Professor MCFADYEAN: I beg to second that.

Mr. HUNTING: I shall object to the minutes. I object to be made to say what I did not say, and a lot to be left out that I did say. I have been incorrectly reported, and I distinctly object to those minutes. I therefore propose that either my part be deleted altogether, or that the minutes be not confirmed until corrected.

Professor PENBERTHY: I will second that, on the ground that it is highly essential we should have what we say reported. I cannot propose that minutes be confirmed which have not reported matters which I think important. I should not have said it unless I thought them valuable.

Mr. SIMPSON: I am sure neither Professor McFadyean nor myself would wish to confirm the minutes if they were wrong.

Professor MCFADYEAN: I should not for a moment second Mr. Simpson's motion if I thought that a serious injustice were being done to Mr. Hunting. I have read the report which appeared in the *Record*, and that was much more inaccurate than these minutes; it was much more full as regards Mr. Hunting's own speeches, but it entirely omitted certain important omissions and contradictions which were pointed out. If I might be allowed to cite it, he said the whole muddle had arisen out of a misprint. My contradiction of that is not in it. I second Mr. Simpson's motion.

Professor PENBERTHY: When a member of the Council gets up to speak on a subject that he wishes some notice to be taken of—that is to say, some notice of what he says as to what other people say, and it is a matter which will come up again, and all the arguments will have to be weighed, and that have to be weighed only through the reports of the Council meeting—he expects his arguments to be reported. I have to go before my constituents in the course of a month or two. I do not speak at all from special views of

my own, but we should get into the habit of having our meetings properly reported, and that is my reason for opposing the passage of these minutes.

Mr. LAWSON: I quite agree with what Professor Penberthy says. If every member of Council is not properly reported, the reports ought not be passed. But how are we to go on with the business?

Mr. SIMPSON: May I suggest that Mr. Hunting should tell us what, to the best of his recollections, he did say, and that Professor Penberthy should do the same, and let us add that to the minutes?

Mr. HUNTING: The reporter has omitted more than half of what I said, as though he had lost a page or two of his notes. It is not as though he had omitted a single clause, but he has omitted the whole bottom half of what I said.

Professor MCFADYEAN: He not only omitted that, but he omitted all the discussion that arose out of what Mr. Hunting said in the latter half of his speech, and that we cannot now recover by any means, and that is why I think we had better take this, which is more correct than the *Record* report.

Mr. HUNTING: That is simply Professor McFadyean's opinion. May I ask this? Is it competent for a majority of one to make me say whatever he likes in those minutes?

Mr. SIMPSON: Will Mr. Hunting accept my suggestion?

Mr. HUNTING: I have no objection to getting on with the work.

Mr. SIMPSON: Will you tell us what you said?

Mr. HUNTING: I want the whole of the latter part of my speech added. The reporter has taken down the first ten lines of what I said, and left out the next twenty. It looks as if it was deliberately done.

The amendment was then put to the Council and lost.

The original motion for the confirmation of the minutes was then agreed to.

Mr. HUNTING: I give notice that I shall refer to the subject at the next Council meeting.

The PRESIDENT: I gave instructions that the meeting should be reported as nearly *verbatim* as possible.

Mr. HUNTING: The reporter has not reported half of the meeting.

Professor MCFADYEAN: If Mr. Hunting brings it up I shall support him.

Absentees.

The SECRETARY: Letters of apology have been received from the following gentlemen, regretting their inability to attend the meeting:—Messrs. Peele, Donald, Elphick, Merrick, Nisbet, Hunter, Kidd, Mason, Trigger, Faulkner, and Wheatley.

Confirmation of Additions and Alterations to Bye-laws.

The PRESIDENT: The next business is to confirm the following alterations of bye-laws passed at the meeting of Council held on the 24th ult. The first is—"That no student shall be entitled to receive the diploma, or to have his name entered on the register of the Royal College, until he has completed his twenty-first year; but he may present himself for his final examination provided he would complete his twenty-first year before the date of the next examination."

Mr. SIMPSON: I beg to propose that the decision arrived at by the Council at its last meeting with regard to this suggested alteration of bye-law be confirmed. I do not propose to use any arguments in favour of it. These confirmation meetings are, as a rule, a matter of form, and for that reason I do not apprehend there will be any opposition to it.

Mr. HUNTING: I was going to ask, What is a quorum? what number of members of a Council meeting?

The PRESIDENT: Seven.

[Mr. Hunting then left the Council Chamber.]

Professor McFADYEAN: I second Mr. Simpson's resolution.

The resolution was agreed to.

[Mr. Lawson then left the Council Chamber.]

Messrs. Hunting and Lawson having left, there was no longer a quorum, and the Council was unable to proceed with further business.

CENTRAL VETERINARY MEDICAL SOCIETY.

(*Continued from page* 136.)

Discussion on Firing.

MR. H. EDGAR said he still felt rather disappointed, notwithstanding the three speakers who had preceded him. He had hoped to have heard something more definite as to the results of firing, or rather, as to how firing produced beneficial effects. He thought it was possible—as Professor Pritchard said—that there were cases where it was absolutely necessary to fire, or at least where the recovery of a case may be very much hastened by firing; and if such was the fact he thought they were justified in performing the operation. Professor Pritchard said that firing acted upon the deep-seated structures. Well, that seemed to him rather difficult to comprehend. For instance, in cases of thorough-pin how did firing act, what deep-seated structures did it act upon. Was it the bursa, the lining membrane of the bursa, or how was it brought about? If it acted upon the deep-seated structures, how was it firing failed more frequently in the case of the flexor tendons than in any other case? His experience was that cases of sprained flexor tendons were most difficult to treat, especially if they fired. In cases of thorough-pin this treatment was superior to any other. He called to mind two cases in his own experience, of cart horses where the thorough-pin was of enormous size. First, he had recourse to blistering, with the result described by the professor—that the swellings were increased instead of diminished. They were afterwards fired, and now if they looked at these horses they could not detect any swelling at all. In almost every case of thorough-pin where he had fired, he had noticed most beneficial effects. He had not, however, observed those results in setoning or blistering. With respect to curb he rather agreed to a great extent with what Mr. Hunting had said. He had seen recovery in cases of curb without any treatment at all, and he had never seen a case of curb where it had been absolutely necessary to fire. Where animals had been blistered and gone lame he had known them become sound after a second blistering, although there might have been a thickening left at the seat of the curb. As to side-bone and its treatment, he could neither agree with Professor Pritchard nor with Professor Macqueen. The latter said that side-bone very seldom produced lameness. He (Mr. Edgar) had seen very few nag horses with side-bone which had not gone lame. He had seen blistering prove absolutely ineffectual in producing soundness, whereas with point firing the animals had afterwards become sound. He should have liked to have heard Professor Pritchard's opinion upon the results of point firing as against the line firing. His (Mr. Edgar's) experience had been that, where there was a bony deposit, point firing had always been much better than line firing. He also believed that great benefit accrued from firing tumours. In one or two instances of thick fibrous tumours of the shoulder, he had had the animals recover more quickly by line firing than by removal or any other treatment. He was of opinion that in many cases setoning could hardly be compared with firing in relation to the beneficial effects accruing. In many cases where recourse was had to firing it was almost impossible to seton. On the whole, while it was

argued by some soft-hearted people that firing was a most cruel operation, his impression was that this operation was not half so cruel as blistering. He thought, from the point of cruelty, that blistering was far worse than firing. After firing there was but a kind of dull pain left, whereas the effect of blistering must be fearfully irritating. Occasionally, when veterinary surgeons were called in to see the effects of firing, they declared that the operation ought not to have been performed ; but had they seen the cases in the earlier stages they might themselves have been inclined to adopt the same course. After all, unless a case was perfectly hopeless, a veterinary surgeon who thought he might possibly do good by his treatment, was justified in doing the best he could for his client, according to his experience and his skill.

Professor PENBERTHY said he had listened with great pleasure to the very mild and frank address of Professor Pritchard, and to the remarks of the subsequent speakers. It appeared that all of them came there that evening with at least one desire, and that was to see if they could determine a theory on which to base the practice of firing; and on this head he was bound to say that so far he had not gathered very much. Two theories had been propounded, one the theory of counter-irritation, and the other that of support as by bandage, permanent or temporary. Professor Pritchard said he did not believe in either, but if he leant to one of them at all, it was to the latter theory. Personally, he (Professor Penberthy), in order to account for the beneficial effects which he thoroughly believed accrued to firing, would adopt a little of both theories and add a little more, for not only were the blood-vessels of one part of the body materially affected by the irritation of another part of the body—as instanced by Professor Macqueen—but a counter-irritant might be applied to one part with a view of having effect on the nutrition of a part distant from it. They had plenty of evidence of the metabolism of tissues—that was change of protoplasm—in one part of the body being materially affected by irritation, or injury, on another part of the body. Thus, a cicatrix on the elbow of man supplied by a spinal nerve was sometimes the cause of neurosis of the fifth nerve, which very often had such effect upon the nutrition of the parts supplied by the latter as to alter the hair on the same side. The application of an irritant on one part of the body would affect other parts of the body, some of which had been defined. There were some people in whom a little ammonia or a drop of cold water applied to certain parts almost immediately induced an attack of asthma. He had known cases where the application of an irritant on one part of the body had materially affected the condition of other parts of the body. He did not say that he could define the exact mode of action. Now, they mostly fired animals which had some adventitious product beneath the skin or in the bones. They knew full well that an adventitious product might be removed. For instance, the temporary callus in case of fracture, when its function was performed and the broken ends supported by the permanent callus, was partially removed by osteoclasts. What effect had a counter-irritant in a case of sprain with thickening of the tissues beneath? This thickening was in many cases the result of formed tissue, which interfered with movement, and caused lameness with or without pain. All would allow that often after firing this thickness was reduced; whether this effect was brought about by increased activity of leucocytes attracted to the part by firing he would not say, but it is in accordance with a natural law that healthy formation is favoured by removal of effete or useless matter. For the reasons he had given he would put into his theory, which did not perhaps altogether satisfy him, namely, that they might alter the nutrition of one part of the body by an application to another part. They had reached a stage in which it can be asserted that the application of irritants to one part of the body would alter the circulation, sometimes rendering the blood supply less, and occasionally increasing it. Certain areas

were mapped out and clinical practice seemed to support this. Alteration in the kidneys by application to the loins was perfectly well known; also alteration in the circulation in the pleura by application to the skin covering the ribs. Then again, if they bandaged a limb with a linen bandage they supported the underlying vessels, and favoured a proper condition of circulation—at any rate such a condition of circulation as tended to lessen the swelling; and he did not think they would go too far in asserting that firing produced a certain amount of pressure, whether that pressure lasted for a long or short period. It supplied a certain support to the enclosed structures, and clinical practice showed that it exercised a beneficial influence in reducing swellings and in the building up of healthy tissues. One thing with regard to firing had not been mentioned, and that was point firing in the case of abnormal bony growths, which in the majority of cases resulted from a diseased condition of the bone-forming elements, and which might pass into a stage which would affect the horse's usefulness. Many of them believed that in case of a splint that caused a great deal of pain and which tended to increase in size, if they fired or punctured that splint, in a longer or shorter time—usually a short time—there would be freedom from the pain. The splint would not only seem to have stopped growing, but in the experience of some veterinary surgeons it had been found that the splint was even smaller by the action of the firing iron. If in the case of splint recourse was had to firing, he saw no reason why they should not adopt like treatment in well selected cases of spavin with this same object. His experience, however, did not coincide with that of Mr. Edgar, who held that firing was not beneficial in a case of sprained tendon. He (Professor Penberthy) thought that if firing was beneficial anywhere it was in a case of sprained tendon. He did not say that he had never seen a case where benefit had not followed firing, but he thought this negative result was comparatively rare in well-chosen subjects. Professor Penberthy went on to say that he knew of nothing that would give more rest than the action of firing when the part had cooled down. As to the preparation of horses for firing, he did not believe that special preparation was always necessary. Daily, horses were brought to the Royal Veterinary College in widely varying conditions to be fired, and it was rarely that there was any serious blemish; he had seen a great many cases where suppuration was not marked. He should fire with a view of producing the maximum of irritation with the minimum of suppuration. As to tying up of horses for more than four or five days after firing, Professor Penberthy said he had a great objection to tying up horses, especially in loose boxes, one moment more than he could help. He would condemn the indiscriminate use of the firing iron. It undoubtedly gave a certain amount of pain, which must always be an important item of consideration. In the construction of a theory of the mode of action of line firing, Professor Penberthy would take into account vascular, trophic, and mechanical effects, and of pyro-puncture, the immediate thermal influence in assisting development to the more distant formation of connective tissue and union; but though no theory might be found sufficient to account for the manner in which firing induced beneficial effects, while experience demonstrates the result we have not the grounds for discarding it altogether. Empiricism is not always irrational. Finally, he expressed his thanks to Professor Pritchard for the clear and lucid way in which that gentleman had expressed his views.

Mr. W. F. Barrett said he must own that firing seemed to be beneficial in the lower animals. It was a strange remedy to torture before relieving, but nevertheless experience of firing did show that their patients derived great benefit from the operation. His experience in practice was that, in many cases, they dallied too long before applying the cautery. Many cases healed rapidly, even though the patient was affected by inflammatory action. When

he was at College he was told by Professor Robertson that they should first cool down the limb, but experience taught him that in many cases they effected no good in doing this, while such treatment necessitated a longer course of rest than would otherwise be necessary, and the animal in the long run suffered more pain in the end. With regard to theories of firing, it did seem strange that at this stage of scientific enlightenment they as a profession knew so little of what they were doing. He must avow that they were constantly firing horses without knowing whether they were right or wrong in doing so. He regretted to hear that leading men of the profession, men who had devoted their lives to the investigation of these matters, men whose duty it was to enlighten ordinary practitioners, knew so little of this subject of firing. Mr. Hunting seemed to be even in doubt whether firing should be defended at all. He advocated that horses should be allowed to get better without firing, without blistering, without any treatment at all. Finally, he left them without any definite expression of opinion. He told them that he did not believe in firing. He (Mr. Barrett) regretted to say that firing seemed to him to be necessary treatment in veterinary practice. In dealing with theories as to how far firing was beneficial, it seemed to him they overlooked the probability or possibility that there might be new tissue formation brought about, and the parts locked together by the inflammatory action set up by the application of the firing iron. Take spavin; he did not see why by inflammatory action the two bones should not be locked together. He submitted that in many cases of spavin, after the application of the iron, first of all a bandage was placed round the joint by the application of the cautery, and secondly that some deep-seated inflammation of the fibrous, plastic integuments must lock the two diseased bones together. With regard to strained tendon, he agreed with Mr. Edgar. His (Mr. Barrett's) experience was that firing was less beneficial in cases of strained tendons than in any other diseases of the horse. He had had dozens of such in which he had never resorted to the use of the cautery, and he was in opposition to his friend, Professor Penberthy, in reference to this matter. With regard to curb, he held that firing was undoubtedly beneficial in cases of curb. His idea was that the parts were locked together, that friction was prevented, that a plastic material was thrown out and the parts were united, bound as it were, and in consequence of this the animal suffers no pain. One thing was certain; after the operation of firing the products that ensued were of a more fibrous character, the curb the limb received was firmer, the parts were more effectually kept at rest. He did not deny that probably firing tended very much to the practical inability of the animal to move. The slightest movement after firing gave rise to a good deal of pain, so the animal was specially kept at rest. As to firing in cases of side-bone, he agreed with Mr. Edgar that firing in these cases did afford great relief. He could recollect many cases in which the animals had suffered for months and were apparently incurably lame, and yet after a severe application of the hot iron they were rendered capable of doing years of work. Then with regard to the preparation of the horse prior to firing, it appeared to him that the speakers had taken rather extreme views. He considered that if an animal was in good health, although he might be having plenty of corn, yet if he were a middle-aged horse he needed no special preparation at all. Time might be wasted in giving him a dose of physic and in the attempt to reduce the system. In the majority of cases he was of opinion that they could not have a horse in too high condition prior to the operation—he did not mean so high a condition as to impair the animal's health. With regard to old horses, it would be very injudicious to reduce them. Horses were occasionally brought to be fired that were overworked, in poor condition, and debilitated from the necessity of action. In these cases, instead of giving the animals lowering medicine, they should try to build up the system by administering

doses of medicine, iron or some tonic. One or two remarks in reference to the treatment of spavin. During the past three years he had been attending for a gentleman several coach horses, and two years ago he bought a horse four years old. The result of excessive pace was that he had to treat many cases of acute ostitis and periostitis. In those cases he commenced his treatment with aperient agents, hot water applications, subsequently cold, and so on. He found that he was simply wasting time, and after trying various plans he decided that the best thing to do was to fire almost at once. Almost directly after firing with the point iron, and though the operation might appear trifling, he must confess that the animals received very marked and substantial benefit. In his opinion, in cases of splint, the iron could not be applied too early. When he left College he endeavoured to fire lightly, so as to avoid suppuration; but his experienoe was that in some cases they must fire deeply, and he referred more particularly to cart horse practice. He was obliged to confess, unscientific as it might appear, that he fired right through the skin in cases of ringbone deposit, and he thus derived more benefit than if he did not so fire. He called to mind one case where the animal was lame after a slight firing, but after a more severe firing it became sound. Mr. Hunting might say that the horse would have become sound if he had not fired again. Well, it might, but in taking several cases one could not argue in that manner. It was clear to most of them that in a number of cases marked benefit did follow the application of the iron, and he was bound to say that in some of his cases benefit resulted from severe firing. As to the pain inflicted, he agreed with Mr. Edgar that the animal suffered more from severe blistering than from firing. After forty-eight or sixty hours the animal got marked benefit from firing, and this specially applied to those acute cases of spavin which one sometimes had in horses under one's care.

Mr. H. W. CATON said they could lay down no special rule as to whether they should fire light or deep—it all depended upon the nature of the animal and of the case they had to treat. He agreed that in cases of splint they should fire through the skin. In many cases of splint brought before him in the course of his practice, he not only fired through the skin, but he penetrated into the splint itself, and deeply too, without causing any blemish or inflammatory action. He believed that if it were done early, deep and well, firing was beneficial to side-bone; but if the operation were deferred for some time he did not believe that any good whatever accrued.

Veterinary-Lieutenant-Colonel DUCK said he should like to mention two methods of firing to which no allusion had been made that evening. The first was needle firing, which was much in vogue on the Continent. He first saw this method adopted at the Brussels School. He referred to the use of a needle perforating a hollow cone of iron at the end of a handle. The point projected beyond the cone half-an-inch, and was introduced into the particular structures diseased. It penetrated right through the skin into the affected part. It appeared to him that a surgical operation performed in this way required a greater knowledge of anatomy than the usual method. It was requisite to know the part that was being actually punctured. He regarded the plan as a great improvement upon the old system of firing. While the effect was very severe, there was practically no blemish left when the hair grew, and they had to feel very closely sometimes to find it. He had had some very good cases where he had used the instrument with every success. In one case a horse was about to be destroyed, but he operated upon it, and it *hunted* two seasons afterwards. Another hunted one season, and he never heard of anything amiss with it afterwards. The instrument was perfectly safe, but they required to know how to use it carefully in order to realise what it was doing. Its use was more certain and more professional than the adoption of the old method. Professor Pritchard spoke of firing as a pre-

ventive matter. He (Colonel Duck) would simply say that the Arabs—the oldest, and as some people thought, the best horse masters in the world—thoroughly believed in firing, and practised it. Another system of firing he saw adopted by Parisian students struck him. This method was to touch each place separately, lightly, and repeatedly, and take a long time over the operation, and the more carefully it was done the more lasting and effective were the results produced. The process was continued until a head showed at the point of puncture. There was another matter upon which he would touch. They very often had a horse brought to them to be fired which was lame in one leg, and they hesitated whether they should fire both legs. Was it not, he asked, sound practice to fire both limbs? If this were done, subsequent trouble and disappointment might be avoided. His experience of firing and its effects had made him a thorough believer in it, but in proper cases.

The discussion was then adjourned, and the meeting ended.

The monthly meeting of the Society was held on January 4th, at the Royal College of Veterinary Surgeons. Mr. A. Prudames, the President, occupied the chair, and the other Fellows present were Messrs. J. K. Bruce, A. L. Butters, H. W. Caton, Col. F. Duck, A.V.D., Henry Edgar, T. C. Garry, A. E. Gostling, Professor Hobday, J. Sutcliffe Hurndall, Professor Macqueen, F. C. Mahon, W. J. Mulvey, Professor W. Pritchard, J. E. Rickards, H. G. Rogers, A. Rogerson, J. Rowe, Hugh Singleton, W. Stapley, F. W. Wragg; also the following visitors: Messrs. C. G. Cockrane, of Moscow, C. H. Cordy, Percy Earle, R. Aitkenhead, Morgan Evans, Harold A. Idenden.

Dr. G. Fleming, C.B., wrote from the Constitutional Club:—"Please convey to the President and members of the Central Veterinary Medical Society my thanks for the honour they conferred upon me by electing me a Honorary Fellow of the Society. It is an honour I very much appreciate."

Mr. F. Smith, M.R.C.V.S., was elected a Fellow, and Mr. J. E. Kitchen was nominated.

Pathological Specimens.

Mr. H. EDGAR then exhibited a *post-mortem* specimen from a dog, which consisted of a cystic calculus *in situ*, and two fatty tumours attached to the uterus, one of which had passed through the abdominal muscular wall. He said that this pathological specimen was of much interest to him, and he thought it might prove of equal interest to the members of that Society. He knew very little of the history of the case. The little fox terrier bitch was brought to him by a coachman to be destroyed. The coachman said the bitch was becoming a great nuisance as she was constantly micturating, and had done this a dozen or more times in the course of a distance of less than half a mile; otherwise she was in good condition. On examining before destroying her Mr. Edgar found a tumour immediately under the last teat but one. He concluded that this was an ordinary mammary tumour, but on dissecting it he found it to be a fatty tumour, protruding through the abdominal muscular wall about the size of a large chestnut, with nearly as much internally. There was another fatty tumour attached to the uterus. The stone in the bladder weighed four drams, and occupied the whole space of the bladder. It seemed marvellous that no symptoms should have been noticed and that the animal did not exhibit signs of pain, seeing that the bladder was absolutely filled by the stone.

The CHAIRMAN: Do you think that the tumours were formed within the abdomen and passed through, or were formed outside.

Mr. EDGAR: I fail to see why there should be the opening. Why should one part be inside and another part out, and it glided to and fro very easily?

There is a kind of skin forming through the fatty tumour. I cut through that. Of course there must have been some cause to make the hole, there is no doubt about that.

Mr. T. C. GARRY next exhibited two bones—the radius and the ulna—of the off foreleg of a St. Bernard bitch, which were affected with septic osteo-myelitis. The bitch had probably died from pyæmia, but he had had no opportunity of making a *post-mortem* examination. The limb was merely sent to him for his investigation. His advice was only sought a day or two before the bitch died. The only history of the case he learnt was this:—Six weeks ago the bitch, previously in the best of health, returned home lame and with a swelling of the fetlock. After a week's fomentation, although swelling was still present, the animal could use the limb. She, however, became suddenly lame again and so remained until she died. At no time was there any considerable pain on pressure. There was no external wound until a week before death, when an abscess was opened. On dissecting the limb a quantity of very fœtid dark pus exuded, and the tissues beneath the skin were found to be gangrenous as high as the elbow. Considerable swelling was apparent both above and below the fetlock. The peculiarity of the case seemed to him to be that there was no external wound at all, and no history of any fracture or anything of the kind. Dr. Yeo, in his pathology, spoke of acute infective periostitis happening without injury, and he (Mr. Garry) supposed that the appearances in the present instances might have been due to blood contamination; suppuration beneath the periosteum and in the medulla producing thrombosis of the vessels and consequent total neurosis of the bone by arrest of nutrition. There had evidently been an attempt to enclose the affected area by the production of new bony tissue.

Resumed Discussion on Firing.

The CHAIRMAN, after expressing regret at the absence of Mr. Hunting and Professor Shave (who respectively moved and seconded the adjournment of the discussion at the last meeting on December 7th, 1893) said: Without interfering with the vote of thanks which I doubt not you, gentlemen, will in due time accord to Professor Pritchard, I feel constrained to tender my personal thanks to him for his able and interesting address, and to you, gentlemen, for the manner in which the discussion upon it has been carried on. That Professor Pritchard's address was an able one I think all will admit, and that it deals with an interesting subject is shown by the number of speakers. All of them, even Mr. Hunting, agree that firing is in many cases useful and necessary. Its mode of action has not been quite clearly defined by any speaker, but that view of it explained by Professor Penberthy comes nearest the theory I think most feasible. Although it is not my own theory, yet it commends itself to my mind. I will endeavour to explain it. All new and adventitious growths, although they may be furnished with nerves and blood-vessels, possess a low degree of vitality; the action of a strong counter-irritant, by diverting the blood-supply, robs the new structure of its supply of nourishment, weakens or destroys its power to exist; once its growth has been checked it is in a fit state to be taken up by the leucocytes which have been brought thither in abundance by the action of the counter-irritant. Does this account for the more potent and lasting effects of firing than of other counter-irritants? Further, if this theory be correct, it follows that firing with the view of strengthening a part is useless and therefore cruel. As a rule I do not find it necessary to prepare our class of patients before operating, but occasionally one meets with exceptions. I was much surprised to hear Professor Pritchard suggest keeping the animal tied up from ten to twelve days after the operation. Personally, I have always found three or four days quite sufficient; I never came across a case of sloughing to any serious

extent. While I approve of light firing, I prefer it deep and at intervals when treating bony exostoses. I would like to ask Professor Pritchard whether he thinks the administration of chloroform necessary and advisable, as he does not mention this much debated point.

Mr. H. W. CATON remarked that Professor Pritchard's interesting address on firing deserved discussing from every point of view. For some years past he (Mr. Caton) had not been able to convince himself of the utility of firing. He thought its effect was questionable. That they derived beneficial results after firing he admitted, but it was just a question as to whether these results were not brought about by time and rest. He certainly expected to have heard more about the physiology from their worthy professor. Professor Pritchard, however, did not enter upon that subject very largely. Several theories had been propounded as to the action of firing, and he (Mr. Caton) had an opinion of his own on this subject. He fired because it was customary to fire, and his belief was that if it acted at all beneficially it did so in serving to bring about a permanent bandage. Professor Macqueen seemed to speak of the operation as producing the absorption of any deposition. On the other hand, other speakers thought that deposition took place and thereby strengthened the part. As to whether they should "feather fire" or "point fire," he considered that a good deal depended upon the nature of the particular disease for which they were treating any animal. He believed that Mr. Edgar expressed disapproval of firing for side-bone. He (Mr. Caton) went on to say that he believed side-bones caused much lameness in many instances, according to the situation and structures involved, and the best operation he knew of in such cases was Professor Smith's operation for side-bone. Where the enlargement was considerable he did not think anything was useful. He was old-fashioned enough to believe that a little rest and a dose of physic to an animal in full active body was beneficial. He liked to give animals three days' rest before firing. A cart horse fed on straw and mangold did not want much preparation. With respect to the depth at which they fired, he thought that depended upon the disease for which they were operating. As to width, that he regarded as a matter of fancy. Concerning the colour of the line, that was a point to which he did not attach much importance. He regarded the thermo-cautery as unquestionably a most useful instrument for thoroughbred horses, and in order to fire lightly and prettily. In firing cart horses, however, he doubted whether the thermo-cautery would be advantageous. He thought the price of the thermo-cautery was excessive, if not prohibitive in many cases. In relation to firing for sandcrack, there seemed to be a difference of opinion between Professor Pritchard and Professor Macqueen. The latter spoke of firing parallel for sandcrack, but he (Mr. Caton) did not see wherein this advantage quite lay. He believed in firing across and preventing the crack from affecting the new horn that was forming. If they could get through it, it was well to do so, taking the bearing off the bottom. Then as to fastening up after firing, he certainly confessed that he did not see the necessity of keeping a horse tied up after the fourth or fifth day if they could get a good cradle upon him. He thought it was more beneficial to allow the horse to have his head and exercise than to tie him up. He had never seen any evil result from allowing a horse to go after the fourth or fifth day. He understood Mr. Edgar to say that he had never witnessed any beneficial or satisfactory effect derived from firing a horse with sprained tendons, and Mr. Barrett, he thought, confirmed that. Mr. Caton, however, was of opinion that if firing was any good at all sprained tendons were the very disease to which it should be applied. In such cases he thought firing was of great importance, but of course there was just a possibility that the great curative agent was, after all, the long rest the animal got. Mr. Edgar advocated firing for thorough-pin, and in these cases preferred firing to blistering. It might be

correct treatment, but when he had a big thorough-pin to deal with he generally physicked the animal and then fired him with a small pyro-puncture iron. He thought that must be advantageous as he had had some very good results, and certainly until he saw some better mode of treatment he should pursue the course he had hitherto adopted. As to point firing for side-bone, he was of opinion that where the side-bone was small and first forming this might be of some benefit, but otherwise he inclined to the belief that they must fire deeply if any advantage at all was to be derived. He believed in penetrating the coronary band, firing right through, and thereby giving the foot some room to expand. Mr. Edgar said that fibrous tumours had received some benefit from firing, but he (Mr. Caton) failed to see how in these cases firing could act. Fibrous tumours might be absorbed by the constant application of cold water and removing pressure from the parts; and in the case of fibrous tumours disconnected to a certain degree, the quicker remedy seemed to him to be the use of the knife. Mr. Barrett spoke about splints, and firing horses as soon as they came from work, and so on. He thought that in the case of splints the same general rule was beneficial as in other cases, and that the horse should be cooled down before firing; that this was beneficial. He was credited with having spoken at the last meeting and with mentioning this, but the speaker was, he believed, Mr. Samson. It was Mr. Samson and not he (Mr. Caton) who referred to splints. He believed in the efficacy of deep firing in cases of bony deposits. Mr. Samson, and not himself again, spoke of spoke of firing splint without causing any blemish. Personally, he (Mr. Caton) failed to see how with point firing they could fail to blemish materially, and with line firing still more. Colonel Duck mentioned needle firing, and he (Mr. Caton) thought it was to be regretted that they did not hear more from that gentleman on this subject. He should have liked to have heard to what cases Colonel Duck considered such firing most applicable. Colonel Duck had spoken of its application to hunters which had been cast aside as wholly useless, and which, after the operation had been rendered serviceable for several seasons afterwards. If any benefit was to be derived from needle firing he (Mr. Caton) thought they should adopt it. They should know more about it, and there was no gentleman more fit to impart this information than Colonel Duck. Was it desirable to needle fire only one or both limbs? Perhaps it would be more efficacious to fire the two.

(To be continued.)

THE WESTERN COUNTIES VETERINARY MEDICAL ASSOCIATION.

THE twentieth meeting of this Association was held at the Red Lion Hotel, Truro, on Nov. 16th, the President, Mr. Thos. Olver, occupying the chair. The members present were: Messrs. P. G. Bond, Plymouth; J. A. Collings, J. P. Heath, W. B. Nelder, Exeter; G. H. Elder, Taunton; F. T. Harvey, St. Columb; A. E. Mitchell, St. Austell; A. H. Oliver, Devonport; W. Penhale, Barnstaple; E. R. Smythe, Falmouth; and the Secretary, Plymouth. The visitors were: Messrs. F. Clunes, St. Austell; J. A. Collings Junr., Exeter; and Young, Truro.

Letters and telegrams apologising for non-attendance were received from Prof. Penberthy, and Messrs. W. Arnall, S. Burton, C. C. Hoadley, W. Langdon, W. Penhale, Holsworthy; F. E. Place, W. Ridgman and W. Roach.

A letter was read from Prof. Pritchard regretting his inability to attend the meeting, and apologising to the Association for the loss of the report of his lecture at the last meeting, which had been forwarded to him for correction; and which he had mislaid, and subsequently been unable to find.

The SECRETARY said that this letter at once explained itself, and the reason of the non-appearance of any report of their last meeting in the professional periodicals. Prof. Pritchard had requested that the report referred to should be sent to him for correction before publication; and his request was complied with. He (the secretary) waited—perhaps somewhat impatiently—for the return of the notes, but they had not come back, nor in fact had any reply to his letters on the subject, until that which had just been read. He felt that this explanation was due both to the gentlemen who had so persistently asked for the report and to himself.

Messrs. F. Clunes, of St. Austell, A. Gill, of Bodmin, and C. Howard, of Exmouth, were unanimously elected members of the Association.

The PRESIDENT called the members' attention to a bill (produced) for the treatment of a case of simple colic by an unqualified and unregistered man, the patient being away from home. The owner—one of his clients—had consulted him (the President) in regard to the account—which certainly was unique—and he had advised him to refuse payment.

After perusing the document, the meeting was unanimous in supporting the President's views.

A copy is appended:—

1893.

Mr.———— peranwell

To———— Camborne.

			£	s.	d.
Nov. 2ent.	..	3 Drenches to Bey mare ..	0	9	0
Dito	..	6 Fever Balls to dito	0	6	0
Dito	..	Blister sides dito	0	2	0
Dito	..	Ejections to dito	0	3	0
Dito 3thd.	..	2 Balls to dito	0	2	0
		Attendance to dito	0	10	0
			£1	12	0

The HON. SECRETARY gave notice that at the next meeting he would move an alteration in bye-law 8, wherein he proposed that the Society should hold three meetings dnring the year instead of two.

Morbid Specimens, etc.

Mr. NELDER showed the bladder of a horse, having two lateral appendices, strongly resembling the horns of the uterus. There were three distinct openings out of the organ, but he was unable to say where these became one common urethra, as the knacker had mutilated the specimen before its peculiarity was observed. The animal had never shown any symptoms of trouble in his urinary organs.

Mr. MITCHELL recorded an uncommon case of parturition in a cow, in which the first calf of twins was born at five months, the second at full time.

Messrs. Nelder and Mitchell were thanked for their communications.

Presidential Address.

Mr. OLVER said: Gentlemen, I believe it is the usual custom that the President should deliver an inaugural address on his taking office, but I hope you will excuse me from so doing to any extent on this occasion, because I feel sure that our time will be more practically and very much better occupied in listening to the remarks that will fall from our friend, who has been good enough to prepare a paper on "Some Diseases of the Horse's Feet" and to

the discussion which I hope will follow. I must first thank you for the compliment you have paid me by electing me as your President for the second time, but I am not going to follow that which now seems to be usual, of telling you how many men there are so much more capable than myself of filling the post, because I am quite sure that you are aware of this. But I certainly should not have accepted the position again, if you had not promised to hold this meeting in Truro, for although it is pretty much one end of the world, and probably some of you would say almost out of it, still I think it is only fair to us who unfortunately live in these remote parts, that you should come among us now and then; and I personally thank those of you who have come so far, at considerable loss of time and some expense, but I must remind you that the same thing applies to the *very few* of us who attend the meetings when held in Exeter. I have been to the larger number of these meetings, sometimes at considerable inconvenience, still I have never regretted it, because I think it does us all good to meet together occasionally, and we certainly can glean some valuable information from each other. I also think the social element is of great advantage, because I hope it tends to do away with some of the little petty jealousies which I fear sometimes exist.

Well, gentlemen, it is a very long time since I became a member of this profession, since then great changes, and I have no doubt many improvements, have been made, especially at the schools, and if the coming men are not an improvement on us of the older school (considering the many advantages that they now have), I think they ought to be, and am inclined to hope that many of them are. I should suppose that it is impossible for an uneducated man to get into the profession now, and no one approves of this more than myself, but I am inclined to doubt if we always fully consider the meaning of the word education. Many people appear to think that education simply means what is to be got out of books, this in my opinion is altogether a mistake. I strongly approve of scientific knowledge, in fact we should be quite unfit for our occupation unless we attained it, but I say don't forget also to be practical. I doubt very much if a man is fit to practise as a veterinary surgeon until he has had an opportunity of improving his education by seeing and doing such work as occurs in everyday practice; consequently I am of opinion that no student should be admitted into the profession until he has seen and done some practice outside his college. I feel there are great difficulties even in this, because if a young man should unfortunately go with a practitioner who does very little practice, and does that little badly, he would have wasted his time and probably attained idle habits. I am very fond of my profession, and don't know of anything more noble than to be able to relieve the suffering of dumb animals.

We sometimes hear a growl about our social position; it seems to me this very much depends on ourselves individually; we all have unpleasant and difficult duties to perform—no man on earth can possibly please everyone, and perhaps it is quite right that it should be so; it is said that even an angel could not do this. We are not all blessed with the same amount of ability; it is said that some men can see farther through a brick than others, and doubtless there is a large amount of truth underlying the metaphor; but if we act honourably, do what we deem to be right, and conduct ourselves as gentlemen, I don't think we need fear much for our social position, or what the world says about us.

Mr. COLLINGS moved a vote of thanks to the President for his pithy address. He commended its brevity, but at the same time would like to hear the speaker at greater length while he continued in such a delightful strain. Coming to the new educational methods he deprecated the four years' course, on the ground of the expense incurred, for too frequently it would be found

that the fees obtained subsequently would not adequately repay the original outlay. He strongly advocated pupilage with practitioners of acknowledged ability; for the knowledge and aptitude which young men gained when brought into contact with cases in the conntry, could never be obtained inside the walls of a college.

The vote was seconded and carried amid applause.

Laminitis and Sidebone, more especially with regard to Treatment.

By W. B. Nelder, F.R.C.V.S.

Mr. President and Gentlemen,—When our courteous and genial Secretary honoured me by an invitation to prepare a subject for your discussion, it was with considerable diffidence that I acceded to his request; for I am fully conscious of the high scientific attainments possessed by the gentlemen who have on former occasions contributed papers for this Society, and my total inability to reach the recognised standard of proficiency. In sel ecting a subject for consideration I have adopted that which you will all agree wilh me, is of the greatest importance to us as veterinary surgeons, viz., Laminitis and Sidebone. It is not my intention to weary you with a long essay, and time will not permit of my entering into detail with any of the affections of the horse's foot, my object being principally to create a discussion on these subjects, which will prove mutually beneficial to us as practical men. I have no new material to offer you, the same ground having been traversed on many occasions by former writers; one in particular whose name we all honour and respect as having accomplished much for the advancement of the profession generally, but more especially regarding the diseases of which I am about to treat.

Laminitis.

As you are probably aware, the sensitive foot of the horse, alternately sinks and rises within the horny box every time the weight is thrown upon or taken off the limb. The descent or ascent is probably one-eighth to one-sixteenth of an inch, and at each movement blood is forced through the vessels more rapidly than before. The vessels of the laminæ are capable of considerable physiological congestion, this congestion is relieved by pressure exerted on the vessels by the weight of the animal. The laminæ support the horse's weight, the strain on them is considerable, so much so that they often yield to the constant tension to which they are subjected when on transit—as on board ship.

The laminæ run in a downward and forward direction, but they do not all support the horse's weight in the same manner. The weight of the body is supported at the anterior part of the foot by straight laminæ at the quarter of the foot by oblique layers of laminæ, and at the heels by laminæ which are almost horizontal. Therefore at the toe the weight is imposed on the length of the laminæ, whilst at the heels it is supported as it were on the strength of the structure, the work which one laminæ does at the toe is shared by twenty at the heels.

When a horse suffers from laminitis the anterior portion of the foot is more particularly affected, the posterior quarters and heels are never, or rarely, involved; the exciting cause being the extra strain imposed on them, consequent on their position and arrangement.

Laminitis, induced by dietetic errors, is probably caused by a poison contained in or produced by the nitrogenous matter, whilst undergoing digestion and assimilation. Laminitis supervening on retention of placenta in mares, or mammitis in cows, is due to absorption of septic material into the blood.

There can be no doubt that we meet with in practice acute and sub-acute laminitis; either of these may become chronic. Chronic laminitis, following

on an attack of the acute form, is generally associated with structural changes in the foot, such as descent of the pedal bone, whereas the chronic form of the sub-acute variety is not so associated. Sub-acute laminitis is generally witnessed in animals with flat feet and low heels, and might well be termed permanent congestion of the laminæ, for this I believe to be the pathological condition, the symptoms are never so urgent as in the acute form, but I am of opinion that the affection is almost as intractable as navicular disease. Once permanent dilatation of the vessels of the laminæ occurs, it is very seldom that they ever again regain their normal condition.

The treatment for such cases should be steady, regular work, bar shoes and cold applications to the feet. In dealing with acute laminitis venesection, conjoined with the admlnistration of physic, I consider are attended with the best results. The abstraction of blood from the jugular is, in my opinion, most advantageous; on no account should it be taken from the toe. Untoward results frequently follow this practice. Gentle purgatives should be given in the early stages. I believe violent cathartics are injurious, and occasionally cause death from super-purgation or pneumonia. In addition, the exhibition of such febrifuges as aconite are beneficial. If the pain be very severe, a hypodermic injection of morphia frequently allays it, and in some instances is followed by a reduction of the fever. Removing the shoes, and the application of hot poultices to the feet should be accomplished.

I must admit I cannot agree with Mr. Broad's treatment; I believe far better results would follow the omission of exercise in the early stages.

The next treatment to which I will direct your attention is the operative, suggested by Professor Smith. The pain in laminitis is the result of the extreme tension inside the foot, due to tumefaction of the sensitive laminæ within a practically unyielding structure. Consequent on this swelling and upon inflammatory changes, separation of the laminæ occurs, and the weight of the horse with other mechanical factors, conduces to the descent of the pedal bone. We know, of course, that it is not every case of acute laminitis which so terminates; some yield most perfectly to the former treatment, but a proportion do not. When the third or fourth day elapses without any perceptible improvement in the condition of the patient, we may take it for granted that structural changes are almost certain to occur. No time is now to be lost in reducing the tension in order to prevent further separation, and give exit to the inflammatory products. For this purpose Professor Smith's treatment is the best, and consists of completely dividing the horny wall in three places, until the sensitive laminæ are reached. One vertical incision should extend from the coronet to the toe, and one in each quarter to the ground surface of foot, and isolating a portion of wall two inches on either side of a central line drawn at the toe. The portion of the wall thus divided is separated from its connection with the sole, until the sensitive parts are reached; these may be exposed sufficiently to allow fluid to drain off if any has accumulated. The wall is not sufficiently liberated unless it can be freely moved inwards and outwards with the fingers. The most difficult part to divide is near the coronet; this must be accomplished by a succession of downward movements with the point of the saw.

Relief is almost immediate, the animal walking away after being released in some cases nearly sound. Shoes, in my opinion, should be applied at once, but in either case the isolated portion of wall is relieved from any ground pressure by lowering it with a knife or rasp until it is above the ground level of the foot. The patient is best operated upon whilst down, cast in the ordinary way with hobbles. Unless the saw is very sharp the operation takes a long time, but I usually rasp the wall very thin where I intend to make the incisions, thus saving a great deal of time and labour. If the operation be performed early, I feel certain we should see very few dropped soles and get

more recoveries in less time than would follow from any other method of treatment. When the patient is convalescent the incisions should be filled in with wax or hard soap. The breach in the continuity of the wall is repaired by an exudate from the laminæ, previous to the growth from the coronary band, and I have frequently been compelled to repeat the operation three or four days subsequently. I have now operated on more than a dozen cases, and am perfectly satisfied that this is the only way to deal with these severe forms of laminitis as a means to prevent dropped sole. And I am convinced it it were generally adopted throughout the country, pumiced feet would be few and far between. One of my patients had the disease in all the feet, and to test the operation I incised the fore ones only. As I anticipated, the pedal bone descended in the hind feet, whereas the fore made a perfect recovery.

Side-bone.

I will conclude my paper by briefly alluding to that disease of the horse's foot known as side-bone. This is generally admitted to be the great curse of the English-bred cart-horse, more animals probably being rejected for this particular unsoundness than any other.

The lateral cartilages are two thin plates of fibro-cartilage, of an irregularly quadrangular form, surrounding the wings of the os pedis, which in virtue of their elasticity, assist the sensitive frog and soft structures of the foot in regaining their natural position after being pressed upwards and outwards by the weight of the animal. The external face is convex, and pierced with openings for the passage of veins; it slightly overhangs that of the pedal bones. The internal face is concave, channelled by vascular furrows, and covers, in front, the pedal articulation; below and behind it is united to the planetar cushion, either through continuity of tissue, as at the inferior border, or by fibrous bands passing from one to the other. The upper border, sometimes convex, is thin and bevelled, like a shell; it is separated from the posterior margin by an obtuse angle, in front of which this border is often broken by a deep notch that gives passage to the vessels and nerves of the digital portion. The inferior border is attached in front to the basilar and retrossal processes; behind the latter it is reflected inwards, to become continuous with the tissue on the lower face of the plantar cushion. The posterior border is oblique from before to behind, and above to below, and joins the preceding two. The anterior border is oblique in the same direction, and is united so intimately with the anterior lateral ligament of the pedal articulation that it cannot be separated from it except by careful dissection.

The causes of this disease are not altogether difficult of explanation. I am fully persuaded that hereditary predisposition is an important factor in its production, for I have detected well-developed side-bones in comparatively young horses, before even they have been put to road work, and on tracing their pedigrees I have discovered the same affection existing in the dams. The excessively high calkins used in shoeing deprives the natural buffer of the foot of its physiological function; the weight of the body falls on the portion of the foot not specially adapted to receive it, probably the circulation becomes defective, and as a result a diseased, degenerated condition of the lateral cartilages frequently ensues. Great stress has been laid by some practitioners on mechanical injuries inflicted by treads as a cause of side-bone; I have no doubt that the affection is occasionally produced in this manner, but in a very small minority of instances.

Why a calcified lateral cartilage should produce lameness was not satisfactorily explained until Professor Smith came to the rescue. He advanced the theory that the pain was due to compression of the sensitive laminæ between the unyielding and often contracted wall of the foot on the one hand,

and the enlarged and calcified cartilage on the other; and the success of the remedy suggested for the relief of this condition, verifies the correctness of his views. The treatment usually adopted, such as firing and blistering, has not yielded very satisfactory results with me. Benefit will occasionally follow the application of a bar shoe if the pressure be removed from the region of the disease.

Operative Treatment.

As soon as I am satisfied that I have a case of lameness due to sidebone, I prepare to relieve the sensitive laminæ from pressure and to increase the size of the foot, for the accommodation of the gradually enlarging cartilage. The following is the procedure: Determine the anterior limit of calcified cartilage while the foot is on the ground, from this point draw a vertical line to the ground surface, so as to cut the fibres in a cross direction; the object of this is to secure as much of the wall as possible for the application of the shoes. The posterior extremity of the cartilage should then be ascertained, and a line drawn parallel with the fibres to terminate in the wall, just in front of the inflection of the heel; between the anterior and posterior lines four or five others may be made running in the direction of the fibres, so as to further release the wall. Sometimes it is necessary to cast the animal, others stand without any restraint. The shoe being removed, and with a sharp saw kept oiled the wall is incised until the sensitive structures are reached. With a fine searcher the wall is separated from the sole by a narrow groove between the anterior and posterior incisions, until blood is detected. A bar shoe is now applied, and the bearing taken off the loosened wall, which should easily spring under pressure of the thumb; if it does not so yield the incisions are either too shallow or not long enough, and the operation will surely fail. To prevent foreign material getting in, the fissures must be filled up with wax or hard soap before the patient is put to work. About a fortnight subsequent to the operation it may be necessary to deepen the incisions, to prevent their being obliterated by an exudate from the underlying structures. One of the essential details of the treatment is is to keep the patient either at work or exercise. For a day or two after the operation the lameness may appear more marked, but this is only temporary, and what may be expected. Later it may be observed that the coronet is gradually bulging over the sidebone, and the wall will grow down with this deformity, which may be accepted as a most satisfactory result. The extent of the expansion may be known by measurement, both before and a week or two subsequent to the operation. I have lately heard of a case where the coronet enlarged no less than two inches four weeks after the wall had been incised, and the horse went sound.

This operation must not be expected to succeed in every case, for we know that many forms of this lameness are complicated by other changes in the foot. Deposits on the plantar surface of the pedal bone, mechanical interference with the structures in the centre of the foot, etc., are unrelieved by external operation, and in fact are only alleviated by the entire deprivation of sensation by the operation of neurotomy.

Gentlemen, I thank you for according me such an attentive hearing. I must apologise for having advanced nothing original, my paper was written merely to verify and corroborate the observations and deductions of Professor Smith, and to induce those practitioners who have not yet given his operations a trial to do so when the first favourable opportunity presents itself. I hope you will now honour me by well criticising my remarks.

Discussion.

The PRESIDENT: Mr. Nelder has given us a very valuable paper; the subject matter is pregnant with interest, and I trust, gentlemen, that you will discuss it to the extent which it deserves.

Mr. PENHALE congratulated the essayist very heartily upon his paper; it was at once both scientific and practical. In regard to laminitis, perhaps in one or two matters of detail, he was not quite at one with the speaker. The first was that of purgatives. He had eschewed the use of these for a considerable time, and had never had reason to regret having done so. As they all knew, purgation in itself was a common cause of the disease, and he had frequently found that medicinal purgation intensified it.

Professor Smith's operation commended itself to them equally on scientific grounds, and on bare natural laws. Its only deterrent was the time taken, and, it must be admitted, the occasional difficulty in operating.

Reverting to the causes of laminitis, he had found that the giving of gruel —either flour or oatmeal—to hunters, to be one of the most frequent producers of this affection with which he was acquainted. The case of one Hunt in particular occurred to him at that moment. Gruel, on the road, or between the runs, was the rule: laminitis was rife. The gruel was stopped, and the affection at once dropped to its normal position.

When he came to sidebone and its treatment, he was entirely in accord with the essayist. He had performed the Smith operation upon twenty or thirty horses suffering from sidebone with almost unvarying success.

Mr. HARVEY wished to endorse the view adopted by Mr. Nelder, viz., that when food was concerned, the toxines producing the disease were invariably contained in the nitrogenous products. He would like to call their attention to the alteration, or modification, which Professor Smith had made in his sidebone operation, and which was equally applicable to that for laminitis. This modification consisted in sawing through the wall horizontally at the level of the lowest portion of the sensitive foot, instead of cutting through the sole at its junction with the wall. By this means all the full benefits of the operation were obtained, while the sole remained intact. For either of these operations he advocated, first, the use of chloroform, and next, the adoption, in so far as was practicable of the Listerian methods.

Mr. HEATH: I have very little to add to this discussion. The two points which I wish to make are these. Many laminitic patients will frequently stand persistently. I invariably cast my patient if he continues to stand forty-eight hours, and one rarely finds that a horse requires throwing a second time. A large number of practitioners advocate bleeding in the treatment of this affection. There is only one complication of laminitis in which I allow this to be admissible, viz., congestion of the lungs. Directly I find that my patient cannot lie down, *i.e.*, that he is distressed in so doing, I abstract two or three quarts of blood, and then with most beneficial results.

Mr. COLLINGS said he felt personally indebted to Mr. Nelder for the lucid way in which he had expounded his views. He (Mr. Collings) well remembered the occasion—now many years ago, more perhaps than he cared to acknowledge—of Mr. Broad's giving the predecessor of the present society a paper on this same subject of laminitis. The methods—rocking shoes and exercise—were then new; since that time the use of Broad's shoe had become so general that at present few smiths did not understand what was meant by "rockers;" and he confessed to a liking for this treatment—in conjunction with sedatives and febrifuges still. At the same time we must progress with the march of intellect, and he hailed with delight any new departure, by means of which treatment became more active and more thoroughly beneficial.

Mr. ELDER did not wish to moralise, but it had frequently struck him how much fashion had to do with the treatment of disease. Take the case of aconite as an instance; at one time aconite was lauded to the skies as a panacea for almost every ill to which horse flesh was heir—laminitis among these ills. He found that aconite was of great benefit in laminitis, although

the fashion of its exhibition in this affection was very decidedly on the wane. He did not purge, he did not bleed. Poultices and aconite, with forcing the patient to lie down and, of course, with all the minutiæ of good nursing, frequently brought about wonderful results. He was a believer, too, in Smith's operation. He had also performed this operation in cases of sidebone but he must admit with varying success.

Mr. BLOYE said that while they had the material for the production of such papers as that which they were now discussing, we had no fear for the result of his proposed motion for three meetings a year instead of two. The essay was teeming with good things, and was certainly equal to rank with the best of the many good ones which the Society had heard. Two or three speakers had deprecated bleeding in the treatment of laminitis He on the contrary—if he got his patient early in the attack—was very whole-hearted in regard to this method. At one time he was perhaps as antagonistic to phlebotomy in this affection as anybody present, but for some years now he had seen such good results from its adoption—he had only had two cases of dropped sole since—that he begged the sceptics to give it another trial. Be it understood that he referred to jugular bleeding only, and that early, for he had found local bleeding absolutely worthless, or worse. Mr. Collings had referred to Broad's treatment and shoes. He (the speaker) found that Broad's shoes minus the exercise, were a valuable accessory to the comfort of the animal, by enabling him to relieve the great pressure at his toes. With the essayist, he thought that for cases which were not well on the road to recovery in forty-eight hours, Captain Smith's operation was the best means of treatment which had yet been produced. At this stage of the disease it certainly was the surest preventive of dropped sole, and he felt sure that the profession as a body was grateful to Capt. Smith for his invention. If they would permit him he would caution members never to allow too long a time to elapse before operating. In one case he had performed the operation on a horse which had been ill for a week, and with this result, in one of the hind feet the isolated portions of horn sloughed off completely. Coming to the sidebone operation he had perhaps been unfortunate in the selection of his cases. As the result of four operations, in no one instance could he say that the lameness was actuully cured. In one of these cases the circumference of the hoof at the coronet had increased to the extent of an inch and three-quarters, so that he could only suppose that some of the frequent complications of sidebone must have existed in these unfortunate animals. These failures had induced him to look upon the operation with some doubt, but with such reliable evidence as to its efficacy he felt bound to try it again.

Mr. BOND thought that veterinary surgeons generally were too much in the habit of considering the disease mainly under discussion as laminitis proper. He was of opinion that almost invariably it was congestion only—that true inflammation of the laminæ did sometimes exist was possibly true, but it was an extremely rare condition. For treatment, in addition to the ordinary remedies which had been advocated, he was a strong supporter of bleeding; the benefits which accrued from its early adoption—and this in no way clashed with operative interference later on, should such be necessary—he considered to be unequalled by any other method.

Mr. OLIVER would not detain the meeting longer than to record his vote in favour of bleeding. His friend—one of the gory advocates present—had some time ago induced him to give the method a trial, and as a result he could if necessary detail a long list of successful cases, brought round quickly by—he believed—this means.

Mr. NELDER having replied to the discussion, votes of thanks to the President for his conduct in the chair, and to the Essayist for his paper brought the meeting to a close.

The members subsequently dined together. After dinner several gentlemen, headed by the President, contributed songs, an innovation which was much enjoyed.

W. H. BLOYE, *Hon. Sec.*

YORKSHIRE VETERINARY MEDICAL SOCIETY.

ON January 26th, the annual meeting was held at the Queen's Hotel, Leeds, presided over by the new President, Mr. A. W. Mason, F.R.C.V.S., of Leeds, and the following officers and members were present: Mr. John Scriven, Tadcaster, the Treasurer; Mr. W. F. Greenhalgh, of Leeds, the Hon. Secretary; Messrs. McCarmick, Wharam, and Somers, Leeds; S. Chambers, Kirkheaton; T. Pratt, Ripon; H. Snarry and G. Hardie, York; F. Thompson and J. Atcherley, Harrogate; Briggs, Halifax; Jas. Cooke, Scarboro; P. Deighton, Riccal; Clarkson, Garforth; J. S. Carter, Bradford; and G. Carter, Keighley; Messrs. Todd and Lane were present as visitors.

At the annual dinner snbsequently a large number of members attended.

After the usual preliminaries, the Hon. Sec. (Mr. GREENHALGH) mentioned that at the last meeting there was a partial revision of the Society's old rules, which it had been considered by lapse of time had become obsolete and not up to the requirements of the present time. Suggestions were made at that meeting with a view to the revision of them, but it was perceived that it would be a work requiring some considerable time and research, and therefore a committee for that purpose was appointed (which had since been added to); they had gone thoroughly into the necessary investigation, and had compiled and had printed what was virtually a new code, more adapted to the emergencies and status of the profession than were the old rules, which had been in existence since 1886. It would be part of the business of this meeting to confirm these rules *en bloc*, to make alterations in them, or to express disapproval of them altogether, which he did not suppose would be at all likely.

Letters of apology were read from Professor Williams, Mr. Thos. Greaves, Mr. Wolstenholme, and from some members of the Society, expressing their inability to attend.

Mr. Pratt, of Rawdon, and Mr. Scott, of Knaresboro', were elected members.

A letter was read from Mr. P. Walker, of Halifax, tendering his resignation as a member of the Society. The Chairman expressed his deep regret, saying that it was a serious thing to have a gentleman who had been a member 15 years declining any longer to be one.

The HON. SECRETARY proposed that Mr. Walter be written to, hoping and believing that when he found how much he was respected by his fellow members he would reconsider his decision and yield to a request that he should change his mind.

It was resolved unanimously to address a letter to Mr. Walker respectfully but earnestly begging him to reconsider his decision.

The CHAIRMAN asked what gentleman they should depute to write to Mr. Walker. He thought as Mr. Greenhalgh, the Hon. Secretary, knew what was the real gist of the whole transaction they might well confide to him the responsibility of at once addressing their old friend by letter.

This was agreed to on the motion of Mr. Scriven.

Revision of Rules.

The CHAIRMAN remarked that the revision of the rules was rather a strong order. With the permission of the meeting he recommended that they be read out *seriatim*, so that anyone who chose could make such comment upon them as he thought proper. The committee who had been entrusted with the revision had taken cognisance of other veterinary societies' rules which were

up to date, and had culled from them what they thought would be improvements on their own old rules. This was done, and it appeared that the new matter in the rules was chiefly with reference to the lapse of time there should be before a member was struck off the roll for non-payment of his annual subscription. Three months' notice of a resolution to be brought forward was indispensable under the old *regime*, but now 14 days' notice will be sufficient, and on the motion of Mr. Carter such notice of motion is to appear in the agenda for the next ensuing meeting. The rules were formerly adopted as a whole by a unanimous vote.

Presidential Address.

Mr. MASON said:—Gentlemen, allow me to thank you most cordially for having elected me to fill the honourable position of President of this Society, and to ask for your indulgence should there be any shortcomings on my part, for I feel and know that there are among us those who are more worthy of this honour than I can pretend to be. I can honestly say, however, that I yield to no man in the hearty interest which I take in the profession to which we belong, and in this Society in particular. I feel all the more confidence in being your president inasmuch as I know that I can rely upon the co-operation of each individual member in the discharge of my duties and responsibilities. Of the benefits and power for good of this and kindred associations there can be no possible doubt. Indeed, I think their power for good cannot be adequately estimated. Our meetings cause us to have many pleasant hours together. We meet from time to time not only old friends, but we make new ones, when ensues an interchanging of ideas, or the dealing out of friendly blows to our mutual advantage, causing us to respect ourselves and each other more than heretofore. If the Associations maintain their ground there will come to be less bitterness in our differences, and by our interchanging of ideas and experience we shall gradually raise ourselves individually and elevate the profession generally.

During the past year the committee you appointed have met many times to go through, and to formulate the code of new rules and regulations which have been laid before you to approve to-day, a task which at first sight might appear easy and simple in itself but I think you will agree that that could not be so when you remember that the rules have been in existence since the year 1866, and have never been revised or amended to meet the requirements of a profession which has made such rapid strides since that date. The minutes of past meetings have had to be carefully looked over, extracts and resolutions selected from them, and I think you will agree with me that the committee have discharged the duty which was assigned to them to our entire satisfaction. In the course of last year's proceedings several gentlemen have merited and have received the thanks of the Society for reading papers on subjects of interest to us, and bringing under our notice specimens and special cases, whereby important discussions have been evoked and valuable information been gathered of a practical and progressive character. I hope, gentlemen, such new developments will continue to take place, and I assure you that I shall myself personally endeavour to bring forward subjects which will be both instructive and interesting—subjects which we shall be able to look back upon and to remember with profit. Let me beg that during my tenure of office you will rally around me in goodly numbers, and make this a record year. In passing I may call to your notice that this is the jubilee year of the Royal College of Veterinary Surgeons, and that its annual general meeting and that of the National Veterinary Association are to be held in London at about the same dates, and no doubt the committee appointed to organise the meeting of the National will do their best to make the anniversary a red-letter day in the history of our profession.

He thought it possible some gentleman there would like to ask what is veterinary science doing now with respect to mallein, tuberculine, and tetanin. No doubt all of them had read Professor Arloing's paper on the value of pneumo-bacilline which he had extracted from the exudate of contagious pleuro-pneumonia as a protective re-agent for this disease. Of the value of tuberculine and mallein there could no longer be any doubt when employed as re-agents. Tetanin, however, was still in the region of donbt as a remedy for or protection against tetanus in veterinary practice. As to the work of preventive medicine, it will be seen that pleuro-pneumonia is almost stamped out, and probably a few weeks will see the country free from this disease. The cases of swine-fever had not nearly reached such high figures as in past years, and there seems now to be an opportunity for effectually stamping it out. The requirements of the Swine Fever Regulations which came into force last November are carried out in accordance with their literal translation. Coming next to the subject of anthrax, there is no denying that anthrax has shown some increase this season, but with the Notification Clause of the Anthrax Order put in force there is no reason to believe that any material increase of it exists; but we must note the folly and waste caused by the unwarrantable slaughter of animals which have been in contact with cattle suffering from that disease. Why should local authorities be advised thus to waste animal life and the ratepayers' money? The period of incubation is too short to render in-contact animals dangerous as carriers of the disease, and it is now well-known that the place, or in a few cases the food—not living animals—is the danger in anthrax outbreaks. It is sad to read the unnecessary sacrifice when so much good work has been done to elucidate the cause and to ascertain the methods of the spread of this disease. Admitting that there has been neglect with regard to glanders and tuberculosis, it must be admitted that glanders maintains its position, but the veterinary profession are agreed that the disease can be stamped out, and that the difficulties in doing so may easily be overcome. The cost of the operation is the obstacle. Local authorities decline to grant compensation, and the Central Authorities refuse to put the burden upon the general taxpayer. The same condition may also be found in relation to tuberculosis.

I would next say a word or two on the subject of quacks and quackery. A quack is simply to be defined as an unqualified practitioner, who practises his art upon the ignorant to whom one doctor seems as good as another, and upon the despairing to whom the quack is a forlorn hope. Now, as medicine advances into the region of an exact science so will quackery recede. The quack is not now the power that he was 50 years ago, and if medicine still be the most empirical of sciences it proceeds upon just lines, excluding none of the innumerable factors which are relevant to the health of the body, and thus it will gradually drive the quack from the field.

My next topic is the Registration of Farriers. The combination of the Farriers' Company, the Royal Agricultural Society, and the Royal College of Veterinary Surgeons, with the object of improving the art, and certifying the skill of those who are proficient is right in the main, and if our Council had declined to co-operate the scheme would not have been abandoned, and we should simpiy have been left outside with no controlling voice whatever. As it is we have a very powerful influence over what is done, and the delegates from our Council are responsible for their action; and as the profession rules the Council its views will have weight and attention at the Council and at the meetings of the Registration Committee.

I think that veterinary evidence is a subject which is assuming a rather prominent position, together with the prosecution of veterinary surgeons for cruelty, It is a subject on which I should like to have said a few words, but I will content myself with merely throwing out to you this hint upon the subject.

I think another point of interest to us at the present time is the veterinary appointments. The Board of Agriculture, as you know, has experienced the retirement of Professor Brown, who is no longer the head of that department. I believe when this department was under the Privy Council there were three veterinarians. Now the Board of Agriculture have only two, and I think as far as possible their inspectors should be veterinary surgeons. We certainly desire to have a proper recognition of our position. The local authorities, if they were better advised, would, I think, see the advantage to be derived from the employment of qualified veterinarians for their purpose. Having regard to the number of diseases transferable from animals to mankind, and then looking at the unscientific people we have now as inspectors of meat and milk, I think if veterinary surgeons would but take an interest in local matters, they would soon find the authorities acknowledging their claims, and making more use of their specially trained services than they do at present. I may inform you of something which passed yesterday at the Council Board of the Royal College, and it was this, that it was thought it would be best to appoint a deputation to wait upon the Minister of Agriculture with reference to this matter; but afterwards it was thought it would be better to send a memorial pointing out the grievance which we veterinarians feel we have, because of the appointment of so many unqualified men as inspectors. As to the manner in which Mr. Gardner will receive our memorial, we can only wait and see. Another question, and I think it is of some interest at the present time, is the way in which some gentlemen will perversely conduct their practice in a most unprofessional manner. No doubt you will have read in the *Veterinary Record* that the South Durham and North Yorkshire V.M.A. have at their meetings been bringing their influence to bear upon this point. A gentleman, it is stated—no doubt he who brought the subject to the front at one of their meetings would not have said it if it had not been true—but he is reported to have said that a veterinary surgeon was in the habit of blowing a horn as he drove through the country villages in order to make himself known. Now this is ridiculous enough, and almost as bad as cutting down prices to lower figures than had before been usual in order to get a contract; but still worse in my opinion is it to have a stall in a market place for the purpose of taking orders and selling medicines. I do not think you could have better cases for those in authority to take up than these. The matter has been before the Registration Committee of the Council, and one gentleman proposed that a small committee be formed to formulate a code of ethics; and another gentleman insisted that it would be necessary to find out the identity of these transgressors, and then to decide that those names should no longer remain on the list, but should be erased; and for that being done I should most certainly have held up my hand—but if you will turn to your Charter and the Act of Parliament you will find that such delinquencies as these are provided for. This was fully discussed there, because several such cases had been brought before the Registration Committee to see what action should be taken. I think, however, the Act clearly lays down that there is no necessity to appoint a committee to formulate a code of ethics, becanse Clause VI. gives you the widest and most sweeping margin in dealing with such cases. (The Chairman here read the clause.) I think the words I have read cover the whole thing, and give you plenty of margin for instituting proceedings in such cases.

Gentlemen, I feel that I must apologise to you for these disjointed remarks, and will bring my address to a close by thanking you for the patience with which you have listened to me, and by wishing that our Society may have an extremely successful year, and every member of it a very prosperous new year with good health to enjoy it.

A vote of thanks was accorded to the Chairman for his address, on the motion of Mr. BRIGGS, seconded by Mr. ATCHERLEY.

Mr. BRIGGS, before the business terminated, made humorous allusion to a hoax which had been attempted upon him by a "swell" who had professed to promise him for £75 a year to doctor 60 horses. The attempt did not succeed, nor would it have done if the fellow had asked for a loan of money, for if he had he (Mr. Briggs) would immediately have detected the young man to be an impostor.

The Annual Dinner.

In the evening the members and visitors dined together at the hotel, Mr. H. Snarry, of York, being the chairman by virtue of his having been president of the Society last year, and the new president, Mr. A. W. Mason, occupied the vice-chair.

During the evening a spirited recitation called "The Charge of Kassassin," was given (not for the first time on these occasions), with dramatic power by Mr. Briggs, and songs were forthcoming from several of those who were present.

After the toast of "The Queen," etc., had been drunk, Mr. Philip Deighton, of Riccal, responded for "The Army, Navy, and Volunteers."

Mr. COOKE proposed "The Royal College of Veterinary Surgeons." He said he had no doubt that Mr. Mason who was to respond, being a member of the Council of the Royal College, and also their county representative, would enlighten them still further than he had done earlier in the day as to all particulars at headquarters; but he thought they would agree with him that the Council at the present time were advancing matters in a more improving way than the Council of the past had done. There was one thing he should like the Council still to do, and that was to get some restrictions put on the way in which the Registered Shoesmiths were trespassing beyond their rights, and putting themselves forward as the foot specialists of modern times. He thought they often went too far in acting precisely as some professional practitioners did in certain districts. He did not think this applied so much to those in cities and large towns as to those in isolated districts. Another thing he should like the Council to take in hand was affording protection to their Colonial brethren. He thought there was not now much incentive for a man to leave his country and go abroad, where he was opposed by men whose principal qualifications were impudence and ignorance. Another thing he should like to see the Council take up was the new-fangled method of dealing in methylated spirits. Speakihg for himself, he found it rather hard, because methylated spirits as compounded formerly was a drug he used to prescribe freely, and he should be glad if the Council would take the matter up and try to get the concession that it might be used as formerly. He had himself applied to Somerset House for such a grant, but he could not get it, and there must be some reason for the refusal which the Council in London might do well to inquire into.

Mr. MASON was received with cheers on rising to respond. He said he had had the honour to be elected a member of the Council, and more particularly so, he believed, to represent this Society in that capacity, and he supposed there was no harm in acknowledging that he had felt some doubts about undertaking those responsibilities, being conscious of his own weaknesses in endeavouring personally to look after the interests of the profession; and anything associated particularly with the Yorkshire Veterinary Medical Society, it had always been his humble but anxious effort to bring forward and to get approved by those at their head. Their profession had never, he thought, been in so good a position before as it had been now for some years past. He thought they were gradually creeping their way into public favour. Their

services were now acknowledged by persons in authority in the agricultural department of the Government, and also he might point out that the County Councils were appreciating the technical knowledge they possessed, and asking for their advice as to the stamping out of disease. He mentioned this in connection with their toast, because it was the aim of their Council to do what they could in the future, to press upon the government which might happen to be in office at the time the benefits which the public would reap from a more extensive and constant use of their professional knowledge in the extirpation of disease. Mr. Cooke had referred to their Colonial brethren. He (Mr. Mason) did not know whether it had appeared in their publications up to now, but there was a committee sitting to formulate a scheme whereby their Colonial brethren or others abroad might be protected so as to get from the authorities there the same protection for veterinary surgeons as those could avail themselves of who remained in the mother country. Foot disease had been incidentally mentioned also by Mr. Cooke. He (Mr. Mason) somewhat disagreed with him as to the term "foot specialists," because most of them had to seek the assistance of a smith when they had a horse's foot to dress. But Mr. Cooke alluded to the R.S.S. who had taken certificates, so that the Farriers' Company were giving these men a sort of patent that they might pass as foot specialists. He thought they would never supersede veterinary surgeons as foot specialists. See how much the veterinary surgeon had to teach them; how few smiths could dress a foot without the surgeon standing over them and telling them where to cut and where to stop. Some men might cut a foot nicely, but he doubted whether any of them would ever become a specialist, and he would urge upon his professional brethren that they should industriously make it public that they were the only foot specialists. The veterinarian was their indispeneable guiding star to tell what to do—what not to do. Now if to describe themselves they would use the word "farrier" instead of dubbing themselves smiths he should be satisfied. Farriers he admitted they might be. He had a farriery on his own premises. Education was advancing, and after a time the term "farrier" would be adopted and acknowledged. They all knew what the term meant, and they must admit that in the olden days they did practice that farriery from which the veterinary profession had sprung. He thought the veterinary surgeon had only to assert his dignity, and when anyone applied the term "farrier" to them let them reply "We are not farriers but veterinary surgeons." Mr. Cooke had spoken somewhat feelingly he thought. Some time ago they had a conversation together on this subject. A gentleman coming from what he might term the wilds of Yorkshire had told Mr. Cooke that he had to compete with men who really in fact were farriers, and who were not educated and qualified and authorised as he was. Now, often out of evil came good, and he (Mr. Mason) was sure it was only a question of veterinary surgeons asserting themselves and educating the British public up to the only and real meaning of the term "farrier," and in that way they would be sure to bring about the universal acceptance of the veterinary surgeon as the exclusively reliable and enlightened foot specialist. As to the methylated spirits, it appeared to be only in the North of England that it had been found hard to put up with the new regulations as to the pollution of a mineral spirit like that. Only one representation which was either from Durham or somewhere else in the North had been sent to the Council in London, and as a committee had been formed to confer with the authorities in the hope of getting relief, perhaps they might look in the future for the removal or mitigation of this particular grievance. He said "perhaps" because they knew what Somerset House was. He did not hold out any hope, but the Council were doing their very best in all respects on behalf of the profession at home and as well of their Colonial brethren. In the next place he would just say that of course

the obtaining of a new Charter was a thing of the past. The agitation which had led to it was buried. The only alteration in their professional routine was now the alteration to the four years' course of study. They had now both a written and an oral examination, and if you look through the list of rejected students, about half were rejected owing to imperfect written examinations. It was, he thought, one of the finest alterations in the examination scheme when the written examination was instituted. The Vice-Chairman concluded by thanking those present for coupling his name with the toast of "The Royal College of Veterinary Surgeons."

Mr. BRIGGS proposed "The Veterinary Schools." He said he would remark, in the first place, that it struck him as being an anomaly that the profession was well provided for in Great Britain with veterinary schools, but that Ireland was altogether left without. Another rather curious thing was that England had only one such school, whereas Scotland had three. After mentioning the debt of gratitude they owed to some of the heads of these schools for the text books they had supplied the profession with, he gave it as his opinion that a student entering the veterinary profession without a previous pupilage was not a person who would do credit to the profession, because the old maxim, *experientia docet*, still held good, and an aspirant for a diploma could have no solid foundation to go upon if he had not had some of the hard physical work to do at first. Now, as an illustration of this he would give an instance of what occurred at the London school, which was his own *alma mater*, when a youth, who had not the least idea of the practical work, made a most ridiculous mistake. Since then that young man had shown himself one of the most fearless and undaunted of those who stood distinguished in one of the Kaffir wars. When he was under examination for his diploma, he (Mr. Briggs) believed by Prof. Axe, he was asked to describe the operation known as backraking a horse, and he at once requested to be supplied with an ordinary rake. With regard to the Scotch schools, I think sometimes those who have belonged to them have an advantage over one who has been merely a London student. In London there was only one diploma-granting body, and that was the one in Red Lion Square, and yet sometimes it was seen on brass plates, "Mr. So-and-So, M.R.C.V.S., London and Edinburgh." Unfortunately the man who had passed in London could not pretend that he also had an Edinburgh qualification, but it was an unquestionable fact that some of the holders of Scottish diplomas ventured to hold themselves out as having obtained their degree in London.

ROYAL AGRICULTURAL SOCIETY.

AT the Council Meeting of this Society, held on February 7th, it was reported that Professor Axe had been added to the Veterinary Committee.

A letter had been read from the Board of Agriculture stating that as the demands of the Public Departments for the year 1894–5 were exceptionally heavy, the Lords of the Treasury regretted that they were unable to sanction the necessary financial provision for the inquiry into the subject of abortion in cattle suggested by the Council of the Royal Agricultural Society. In these circumstances, the Committee were of opinion that it was desirable that an inquiry into this disorder should be undertaken by the Society itself, and they accordingly recommended that a Committee of Inquiry be appointed for this purpose, such committee to be empowered to collect evidence from stock-breeders and from veterinary surgeons, both by the issue of circulars of inquiry and by the calling of witnesses, and to be instructed to report as to the advisability of experiments with breeding animals being undertaken by the Society. In the event of these proposals being adopted by the Council,

the committee recommended that the Special Committee be constituted as follows :—Sir John Thorold, Hon. C. T. Parker, Sir Nigel Kingscote, Colonel Curtis-Hayward, Mr. Garrett-Taylor, Professor Brown, Professor Axe, Professor McFadyean, and Dr. Sims Woodhead, with power to add to their number.

Professor Brown had presented the following report :—

Pleuro-pneumonia.—No case of this disease has been discovered in this country since the early part of November. During the past year there were nine fresh outbreaks in five counties; 30 diseased cattle and 1,157 healthy ones which had been exposed to the risk of infection were slaughtered by order of the Board of Agriculture, in addition to 86 suspected cattle, which, on *post-mortem* examination, were found free from the disease.

Swine Fever.—From November 1st up to January 27th, 1,645 pigs died from this disease in Great Britain; 9,607 were slaughtered by order of the Board of Agriculture as diseased, or having been exposed to infection, and 152 suspected were slaughtered, but found, on *post-mortem* examination, to be free from the disease.

Anthrax.—Returns of this disease were received from 68 counties in Great Britain last year, as compared with 60 in 1892, 50 in 1891, and 48 in 1890. The increase in the number of outbreaks of anthrax, which began early last year and continued throughout the year, is still going on. In the four weeks, ended January 27th, there were 56 fresh outbreaks reported and 115 animals attacked, as compared with 35 outbreaks and 92 animals attacked in the corresponding four weeks of 1893.

Rabies.—This disease has now for some time been on the increase. During the past year there were 93 cases as compared with 40 in 1892. In the first four weeks of the present year there have been 13 cases, as compared with nine in the corresponding period of last year.

Outbreak on Lord Middleton's Estate.—On December 23rd last a request to investigate an outbreak of disease on a farm belonging to Lord Middleton was addressed to the College. The Secretary of the College replied that Professor McFadyean doubted whether it would be possible to determine the nature of the disease before another animal was attacked, but that he would visit the farm before that, if it was thought desirable. Since that date Professor McFadyean has been in correspondence with Mr. Wright, Lord Middleton's agent, and it has been arranged that he (Professor McFadyean) shall visit the farm on Thursday next. No fresh cases have occurred in the interval.

Investigations.—Since the last meeting of the Veterinary Committee, investigations for the members of the Royal Agricultural Society have been made regarding the following diseases :—Mineral poisoning in cattle, parasitic enteritis in cattle, braxy in sheep, anthrax in horses and cattle, and diarrhœa in calves, which will be referred to in detail in the Annual Report of the Royal Veterinary College.

Inquiry into Abortion in Cows.

Mr. DENT said that as the Treasury were unwilling to provide funds for an investigation by the Government into the causes of abortion in cows, the Veterinary Committee, being unanimously of the opinion that such an inquiry was urgently necessary in the general interests of stock-owners, had resolved to ask authority from the Council for the Society itself undertaking an investigation on its own account. Following the precedent of 1876, when the Chemical Committee collected some very valuable information on the subject of the manurial value of cakes and other feeding-stuffs, by means of evidence given verbally before it by experts, it was proposed that the Special Committee to be appointed should take evidence from veterinarians and stock-owners,

and endeavour in this way to ascertain the lines for further inquiry. What they now propose would involve but little expense, and if the Special Committee should find it necessary later on to ask for a grant of money for exact scientific investigations into the matter, he hoped the Council might see its way to vote a sum for the purpose. At present, however, they only asked for authority to the Committee to take evidence, and to issue, as a preliminary circular letters of inquiry to those who were likely to be able to afford useful information. The Committee would be much obliged to any member of the Society who would kindly give information himself, and suggest the names of other stock-owners to whom the circular might usefully be sent. The questions to which answers were desired were as follows:—

Questions.

1. During what year have you had experience of abortion among your cows?
2. What was the total number of cows kept and the number that aborted in each year?
3. At what month of gestation did most cases occur?
4. Did abortion occur among cows at grass as well as among those housed?
5. What was the nature of the diet of the cows during the winter months?
6. Was it observed that the cows that aborted stood near each other in the byre?
7. What was generally done with the cows that aborted—were they sold or again put to the bull?
8. Have you observed repeated abortion in the same cow?
9. Have you formed any opinion regarding the following as possible causes of the abortion in your stock:—
   Fright or accidental injury,
   Errors in feeding,
   Contagion?
10. Have you observed that cows served by a particular bull were specially liable to abortion?
11. Have you had any experience of abortion in mares or ewes?
12. Have you tried the preventive measures recommended in the Society's Journal (Vol. II., 1891, page 739), or any other method of treatment? and, if so, with what result?
13. Would you be willing to allow any experimental treatment to be adopted in your herd?
14. Any general observations likely to prove useful for the purposes of the inquiry.

The Veterinary Department of the Board of Agriculture.

Mr. DENT said he desired to say a few words with reference to the reports as to the contagious diseases of animals which they had been accustomed to receive regularly from the Board of Agriculture, through Professor Brown. The Veterinary Committee of the Council were indebted to Professor Brown for the great care which he had always exhibited in connection with these reports; and the kindly relations which had always existed between the Committee and the Veterinary Department was a source of great satisfaction. There were rumours that an alteration was about to be made in that Department, but it was uncertain at the present moment whether Professor Brown was still at the head of that Deparrment, or what was his exact position. It was not, however, their business to express opinions, or to make statements to the Departments of the Government as to whom they should appoint, or how they should fill up vacancies in their offices. He had only to say on the

part of the Veterinary Committee, and he was sure on the part of the Council, that they sincerely trusted that a gentleman of equal professional eminence, and with the same kindly and judicious manner as had characterised Professor Brown, would be appointed to the vacancy. He hoped and trusted that they might find that to be the case, and that the relations of the Veterinary Committee with the Board of Agriculture might be as cordial in the future as they had been in the past.

The Duke of RICHMOND and GORDON said that, being deeply concerned in the welfare of agriculture, he took the greatest interest in the Veterinary Department of the Board of Agriculture, partly, perhaps, because he had had the satisfaction of placing that Department upon its present footing when he was Lord President of the Privy Council, about the year 1878. And having appointed Professor Brown, Mr. Cope, and Mr. Duguid to their present offices, he should like to take that public opportunity of expressing his thanks to those three gentlemen for the very admirable manner in which, since that time and up to now they have carried out the duties of the Department. The agriculturists of the country were deeply indebted to them. Those duties had been carried out in a remarkably able and zealous manner, and he should be very sorry if in any change which took place, the administration of the Department should be varied from that which had existed so long. Mainly owing to the exertions of that Department and of those who had been at the head of it, cattle plague had been stamped out, pleuro-pneumonia (as they had just heard in the report of the Veterinary Committee) no longer existed in this country, and foot-and-mouth disease had been entirely eradicated. (Cheers) It seemed to him that it was absolutely essential that the Veterinary Department should continue to be officered in the same manner as in the past. Mr. Dent had stated that it was no business of theirs to dictate to the Board of Agriculture what they should do; but, at the same time, he (the Duke) thought that, as practical agriculturists, they might express their opinion upon this very important subject, and in a manner which, he hoped, might reach the ears of the President of the Board of Agriculture. Professor Brown's impending retirement, under the rules of the public service, had been known to that Department since the beginning of last year, but they had not yet heard of any person being appointed as his successor. Up to the present time there had been three professional officers, at the head of the Veterinary Department, organising their work, and having their time fully occupied with their public duties. Professor Brown having ceased his connection with the Board of Agriculture, the Veterinary Department was left with only two gentlemen, most eminent in their profession, Mr Cope and Mr. Duguid, who were now doing, or attempting to do—he felt sure most conscientiously—the work which had formerly been done by three. The cattle plague in 1877 was stamped out with an expenditure of £7,000, after the Veterinary Department had been established on its present footing. In the previous epidemic, when the Department was less highly organised, the "stamping out" process had cost some millions of money. It was not, therefore, a very exaggerated statement to make that, as a consequence of the Veterinary Department being equal to the task of dealing with these terrible diseases, the country had been a great gainer from a monetary point of view. He asked whether that was the time when the Veterinary Department ought to be weakened. On the contrary, he thought that it ought to be strengthened. They knew at that moment, from the public prints, and from the report of the Veterinary Committee, that there was a considerable amount of swine fever in this country, and that a praiseworthy attempt was being made by the Board of Agriculture to get rid of that disease. It was also well known that, in order to arrive at a conclusion as to the best means of eradicating swine fever, an enormous quantity of *post-mortem* examinations were necessary. He therefore ventured to suggest that this

was not the time when the Veterinary Department should be weakened. Supposing that there were only two professional gentlemen left to do the work of the Department, and that there were a sudden outbreak of disease, a breakdown of the machinery might occur, with serious consequences to the community at large. He thought that it would not be at all satisfactory to the agriculturists of this country unless to succeed Professor Brown an appointment was made without delay, of a gentleman as eminent in the veterinary profession as could be found, to occupy the position that had been filled by Professor Brown, with so much credit to himself, and such advantage to the country.

Professor BROWN said he should be glad to be permitted to express his personal satisfaction at the very kind remarks which his Grace the Duke of Richmond and Gordon and Mr. Dent had made as to the veterinary officers and the Veterinary Department. In 1878 the Duke of Richmond had reorganised the Department which then existed, and appointed himself and his colleagues, who had worked with him long before that time, and since. His colleagues would be very greatly gratified when he reported to them what he had heard that day in their favour. So far as the question of his retirement and the future arrangements of the Veterinary Department were concerned, it would not be desirable that he should say anything more than this, which he was authorised to say, viz., that the whole question of his retirement and of his future connection with the Board of Agriculture was under consideration. His chief object in rising now was to thank the Council very heartily on behalf of his colleagues and himself for the very cordial way in which they had expressed their appreciation of their services.

Notes and News.

AN AMERICAN "BULL."—The *Western Agriculturist* of Chicago says that "About one-third of the horses of Ireland are donkeys."

THE ROYAL ACADEMY OF MEDICINE OF BELGIUM.—We are gratified to learn that the accomplished director of the Milan Veterinary School, Professor N. Lanztllotti-Buonsanti has been elected a Foreign Corresponding Member of this learned body.

HIPPOPHAGY IN VIENNA.—Hippophagy is largely on the increase in Vienna. The butchers' shops in that capital selling that commodity in 1892 retailed the flesh of 18,209 horses, or 4,869 above the total consumption of Breslau, Hamburg, and Berlin combined.

BRITISH INSTITUTE OF PREVENTIVE MEDICINE.—We learn that the trustees of the late Mr. Richard Berridge have handed over the promised donation of £20,000, together with the accumulated interest thereon. The Grocers' Company have likewise paid over to the Institute their donation of £10,000.

STRAY DOGS IN LONDON.—According to the statistics compiled by the authorities at New Scotland Yard, the police in December last captured 2,086 stray dogs in the streets of the metropolis. Of these, 1,562 were conveyed to the home at Battersea. During the above period sixty persons, including one police constable, were bitten, but no mad dogs are reported. Five, however, were killed as "ferocious."

RABIES IN THE WEST OF SCOTLAND.—Owing to the increased prevalence of rabies in the west of Scotland, the authorities in Glasgow and in the county of Renfrew have proclaimed a three months' muzzling order; so that all dogs found at large and unmuzzled, and without a collar bearing the name and address of the owner, will be destroyed. Several persons bitten by rabid or suspected dogs have been sent to the Pasteur Institute, Paris, for treatment.

GLANDERS IN ILLINOIS.—As in England, so in Illinois, glanders prevails to an unpleasant degree. During the past year outbreaks have occurred in twenty counties, and sixty-two horses and four mules were found affected. These were destroyed, involving an expense of £550. No less than 208 horses and twelve mules were quarantined an account of exposure to diseased animals. Twenty-two horses suffering from glanders have also been killed near Sioux City, Ia.

ELECTRICAL EUTHANASIA.—Electricity is now being utilised for killing homeless dogs and cats at Hartford, Connecticut, U.S.A. In the rear of the police station there is a cage just large enough for a dog to stand in, fitted up with electrical connections. The fore feet of the animal rest upon one electrode, and his hind feet upon another, and when he is in position, an electric current is switched on, and he is put to death on the same principle as criminals are executed.

HORSES IN RUSSIA.—The total number of horses in Russia, according to statistics, is twenty-four millions. Seventeen millions of these belong to European Russia, and seven millions to Asiatic Russia. There are six Imperial and 3,430 private studs, with 10,00 stallions and 23,000 mares. In the steppe districts there are 10,000 stallions and 1,000,000 mares. The money expended in 1889 for horse-breeding amounted to 1,131,551 roubles, or about £113,155, and in 1890 to 1,135,770 roubles.

ANTI-RABIC INOCULATIONS.—The bacteriological station at Odessa reports 644 persons as having been subjected to anti-rabic treatment during the year 1892. Of these persons, six had been bitten by wolves, 593 by dogs, thirty-two by cats, two by horses, and eleven had been exposed by the care of other persons affected by the disease. Of the 640 persons who finished their course of treatment, not a single one had died. Four persons died before the course of treatment was completed, the inoculation having evidently been begun too late.

DOMESTIC ANIMALS IN PRUSSIA.—The result of the cattle census taken December 1st, 1892, which has just been published, shows the following figures for Prussia:—2,647,388 horses, 208 mules, 4,284 donkeys, 9,850,960 cattle, 10,092,568 sheep, 7,704,354 pigs, 1,953,748 goats, and 1,249,500 beehives. As compared with 1867, the number of horses has increased 13 per cent.; cattle, 22 per cent.; goats, 44 per cent.; while mules show a decrease of 72 per cent.; donkeys, 52 per cent.; sheep, 54 per cent.; and beehives, 4 per cent. during the same period.

PRICE OF TUBERCULIN IN GERMANY.—In view of the importance of tuberculin inoculation as a means of diagnosis, the Central Association of Agriculture recently addressed a petition to the Minister of Agriculture, that the lymph might be supplied at a cheaper rate. The Minister recognised the importance of the request, and informed the association, through the rector of the Veterinary High School at Berlin, that the lymph will be supplied at 28 pfs. (about 2¼d.) per bottle, cost price. This will bring it within reach of the individual breeder.

A REMARKABLE OPERATION.—The advance of surgery can furnish few more singular illustrations than that afforded by the London Press towards the end of last month. in which mention is made of an operation in one of the London hospitals, whereby the breast of a blackbird was fastened to a woman's face as a substitute for her nose, which had been so damaged that it had to be removed. The operation had proved perfectly successful, it is stated, with every appearance of the woman being provided with a useful nasal appendage, though how it will perform its functions when the cure is complete remains to be seen.

THE TURIN VETERINARY SCHOOL.—After a severe ordeal before a Commission composed of Professors Bassi, Cocconi, Brusasco, Perroncito and

Piani, Dr. Frederico Boschetti, assistant to Professor Perroncito, has been reported competent to occupy the chair of pathology and veterinary clinical medicine in the Turin Veterinary School. The test applied was the defence of his thesis on anthrax in its relation to septicæmia, and its prophylaxis and cure; the delivery of a public lecture, and a public clinical diagnosis. This ordeal he passed with great distinction, which is not to be wondered at, as—though young—he had already shown that he possesses all the qualities necessary in a scientific and progressive teacher. We beg to offer him our hearty felicitations.

DOCKING HORSES' TAILS.—A Reuter telegram from Halifax says that the women of Canada who subscribed for a pair of horses, a sleigh, and furs as a wedding gift to Princess May are indignant that the horses were docked before being shipped. Steps are being taken to prosecute the parties responsible for this act, and the subscribers are also sending a memorial to the Princess asking her Royal Highness to express her reprobation of the cruel practice, and to refuse to accept the horses. The women of Canada are to be congratulated on the protest they have made against this barbarous and disgusting mutilation, which is a disgrace to British horsemen who encourage such a depraved and senseless fashion. It is only in the United Kingdom that it prevails, and it is to be hoped that the memorial sent from Canada will have the desired effect.

THE ROYAL ACADEMY OF MEDICINE OF BELGIUM.—At the *Séance* held in December last, Dr. Lydtin, Superior Medical Councillor of Carlsruhe, and Veterinary adviser to the Baden Government, was elected an Honorary Foreign Member. On the same occasion, Professor Degive, Director of the Brussels Veterinary School, who is President of the Academy this year, delivered his installation address; and at the New Year's reception by the King of the Belgians and the royal family, of the representatives of various public and scientific bodies, Professor Degive, as President of the Academy of Medicine was present, and in offering the good wishes of the Academicians to his Majesty and the Queen, referred to the great success of the Academy and of medicine generally, under the fostering care and encouragement of the King, as well as of the happy alliance of human and veterinary medicine, as was evidenced by his appearance as President.

TUBERCULOSIS IN THE UNITED STATES OF AMERICA.—During the past year a great deal of work has been done in the direction of suppressing tuberculosis among cattle in New York State. About 20,000 animals were examined by the three inspectors of the State Board, and of this number 686 were found infected and killed. The *Albany Cultivator*, in an article on the subject, says:—"If breeders would quarantine, under their own observation, animals but slightly affected, a considerable percentage might probably be saved. This proposition, it is thought, will be made to owners of animals, and if acceded to, will be a move in advance; but if not, the only way left is for all suspected animals to be killed. Owners of cattle will, sooner or later, awake to the necessity of having their herds examined annually by a veterinarian, and if any animals are found diseased, have them killed. It requires the individual effort of every farmer. When purchasing cattle, he should have them examined before accepting them, and should do the same before selling animals to others, as the inspectors report that in many cases it was brought into herds by pnrchase of cattle that outwardly looked perfect.

GOATS IN STABLES.—It is curious to note how ancient superstitions about animals and their diseases still linger in Europe. The notion that goats associating with horses in stables kept the solipeds free from disease, is as old as the days of Vegetius, and it yet holds sway. A large horse-breeder, the *Live Stock Journal* says, has written the following letter to a French contemporary relative to a remedy employed last August dnring an epizootic which

was raging, and which killed a large number of horses. "There are," he says, "at the Chamant haras five or six he-goats, which wander about with the horses, and which appear to take all the diseases that fall on the stud. There is never an invalid at Chamant; lame horses may be seen, but never ill ones. Tristan (the well-known English horse), which has become one of the best-known stallions, lives with his he-goat; he has one all to himself, and they are great friends. Lately, in one of the numerous paddocks of the haras, was found a number of colts whose nose and eyes were beginning to run. A he-goat was at once placed in the paddock, and in eight days all the colts were cured; but the goat was on its back, unable to move, having probably taken in all the germs of the disease with which the colts were attacked. This goat custom has been long in force, and formerly post-masters would not have been without one in each stable."

THE BEST METHOD OF SLAUGHTERING ANIMALS FOR FOOD.—At a recent meeting of the Berlin Physiological Society, Dr. Dembon, of St. Petersburg, read a paper "On the Best Method of Slaughtering Animals," which gave rise to an animated discussion. Two methods are in use in the central slaughterhouses of the Berlin "Viehhof." One consists in stunning the animal by blows on the head before killing it; the other, in sudden severing of the carotids without any previous stunning. This, as is well known, is the old Jewish ritual method of slaughtering. Dr. Dembon has carried out a series of experiments on animals in Professor Munk's physiological laboratory in Berlin, and his results go to prove the superiority of the Jewish method. To stun completely a powerful animal, such as an ox, as many as eight or nine blows are sometimes required; whereas the loss of blood from the brain that follows the severing of the carotids produces unconsciousness almost instantaneously. Again, where the animal is stunned by blows on the head, there is paralysis of the vasomoter centre, and, in consequence, an enlargement of the blood vessels. This prevents the blood from escaping quickly and completely. Now, it is a fact well known to butchers that raw meat will not keep fresh unless the blood be permitted to escape as freely as possible; and many of them for this reason habitually employ the Jewish method of slaughter, which, by the strong reflex convulsions that follow the sudden opening of the large vessels of the throat, favours a speedy and complete escape of the blood. These reflex convulsions also cause the production of lactic acid in the muscles (as proved by Du Bois-Reymond in 1859), which probably acts antiseptically.

Correspondence.

JEWISH CATTLE KILLING AND MOSAIC MEAT.

SIR,—An absurd fad states that "probably the Jewish race owes its immunity from phthisis to the Jewish method of slaughtering cattle, and to the Jewish mode of meat inspection."

There are no available statistics showing that religious or conforming Jews are healthier or live longer than racial or non-conforming Jews, who have long discarded the ancient Egyptian or Jewish food laws, and who, by taking a more varied diet, obtain chemical constituents which the orthodox Jew is unable to indulge in.

Being myself a Jew I have had many opportunities of knowing Jews who have unfortunately died of tuberculous and allied affections.

Meat Inspection.—Extensive lung diseases, like many other maladies, may render the meat of cattle unfit for human food.

On the other hand, my own experience agrees with many more who are familiar with the examination of slaughtered cattle, that a moderate amount

of localised lung disease may be associated with meat of the finest healthy nutritive qualities.

Jewish Habits and Diseases.—As regards alcoholic drinks, with few exceptions, temperance among Jews of all climates is true, hence, probably, their accredited longevity.

Many eminent Jews and Jewesses, both at home and abroad, have, by taking too little out-door exercise and by over-eating, "dug their early graves with their teeth."

Everywhere Jewish men and women are peculiarly liable to diseases of indigestion or dyspepsia, to diabetes, cataract, etc., which would seem often to arise from eating too much and digesting too little, frequently aggravated by want or deficiency of regular exercise in the open air.

Similar conditions tend to produce undue obesity, irritability, "temper," and debility among many Jewesses.

Since the Jews have been allowed to leave their Ghettoes, especially their present life of superior environment in Great Britain and our colonies has progressively improved the physique, the physical force, the bodily endurance, and the complexions of modern Jews and Jewesses as compared with Jews and Jewesses of the recent past.

Among Jews their excessive proportion of insanity, of brain, spinal, and other "nervous" diseases and "nervous" irritability seem due chiefly to too frequent close consanguineous marriages.

"Jewish" Cattle Killing and Meat.—Personal observation in slaughter-houses and of physiological and pathological research in experimental laboratories have convinced me of three things:—

1. That the Jewish method of killing cattle is consummately cruel and clumsy, tending to spoil the meat and accelerate early decomposition.

2. That the Jewish inspection of meat is a farce, and their inspectors of meat are ignorant of veterinary science, the microscope, etc.

3. That the Christian method of stunning cattle with a pole-axe or mallet, then pithing, or else dividing the spinal cord near the brain, supplies meat containing somewhat less blood than "Jewish" meat.

Hence such "Christian" meat keeps fresh somewhat longer than "Jewish" meat.

Fright or Fatigue Fever.—As in the Jewish process, cattle are slowly bled to death without being previously made insensible by stunning, the animal suffers avoidable agonising fright or fatigue.

Turning to my notes written at the time in a Jewish slaughter-house early in 1890, I find the following remarks about the Jewish method of killing calves:—

A rope is attached to the hind legs of the calf, by which the poor brute is suddenly raised or vertically hoisted up so that its nose almost touches the ground.

Thus hideously frightened, the Schauchet or Jewish cattle cut-throat, with a sharp knife then divides the throat and the neighbouring vessels of the calf.

The muscles of the conscious, slowly-bleeding calf tremble all over, and it loudly snorts up the air.

I have seen such a calf make eight full revolutions of a circle.

Watch in Hand I have timed the process of dying to occupy about seven minutes.

The Physiology of Shock, etc.—The pallor in shock or fright seems due to spasm of the cutaneous vessels.

In the case of animals suddenly exhausted by excessive exertion, it would appear that the blood becomes thicker, due probably to the demands of the tissues for fluid.

Experience tells us that, owing to increased proneness to blood-clotting, less blood can be obtained from animals which have been chased, long pained,

or frightened, than from those in health, at rest, and during intense insensibility, as by stunning healthy cattle in the slaughter-house.

Evidence goes to show that the tissues and blood of excessively-fatigued animals are abnormal.

Darwin and others have proved that fright is a form of fatigue. Recent research shows further that shock and terror seem likewise to increase abnormal or degenerate *metabolism*, or the continuation of healthy biochemical changes in living tissues.

Metabolism is somewhat diminished in natural healthy sleep.

During the hibernation, and during the æstivation of animals and plants, their metabolism is reduced almost to the vanishing point.

By skilfully stunning healthy cattle, and thus producing immediate intense insensibility, the abnormal or *degenerative* metabolism in the blood and tissues is prevented, which occurs in animals painfully dying in consciousness, as by bleeding to death in the unstunned but cut-throat system of slaughtering cattle according to the "Jewish" ritual.

Animals dying in prolonged pain undergo early *rigor mortis* or after-death stiffening, which quickly disappears, and subsequently the tissues more readily decompose.

In his "Expressions of the Emotions in Man and Animals," Darwin has fully discussed the physiology of fear or terror.

In his "Ptomaines and other Animal Alkaloids," Dr. A. C. Farquharson has carefully collected many instances of prostration from over-exertion or fatigue-fevers and diseases produced by fright, exhaustion, etc.

J. LAWRENCE-HAMILTON, M.R.C.S.

Communications, Books, Journals, etc., Received.

COMMUNICATIONS have been received from F. C. Mahon, London; W. Brydon, Boston, U.S.A.; Dr. Salmon, Washington, U.S.A.; Veterinary-Captain Haslam, A.V.D.; J. Wilson Baker, Stuttgart; T. F. Renehan, Johnstown, Co. Kilkenny; A. W. Hill, London; R. Ward, Baltimore, U.S.A.; W. H. Bloye, Plymouth; W. F. Greenhalgh, Leeds; General Sir F. Fitzwygram, London.

BOOKS AND PAMPHLETS: *United States Department of Agriculture*, Insect Life; Bulletin des Séances de la Société Nationale d'Agriculture; Eight and Ninth Report of the United States Bureau of Animal Industry; Bulletin de la Société Royale Protectrice des Animaux; *A. Railliett*, Traité de Zoologie Médicale et Agricole; *A. Vachetto*, Vademecum del Veterinario; *A. Landrin*, Le Chat; *C. W. Stiles and A. Hassall*, A Revision of the Adult Cestodes of Cattle, Sheep, and Allied Animals; Report of the Minister of Agriculture for the Dominion of Canada; The Horse, His Life, His Usage, and His End; Municipal Abattoirs; Cruel Sports; Bulletin of the Johns Hopkins Hospital; *J. A. and G. Gresswell*, The Bovine Prescriber.

JOURNALS, ETC.: *Live Stock Journal; Veterinarian; Agricultural Journal of the Cape of Good Hope; Modern Medicine and Bacteriological World; Clinica Veterinaria; Annales de Médecine Vétérinaire; American Veterinary Review; Thierarzt; Journal of the Royal Agricultural Society of England; Journal of Comparative Medicine and Veterinary Archives; Baily's Magazine; Edinburgh Medical Journal; Presse Vétérinaire; Archiv für Wissenschaftliche und Praktische Thierheilkunde; Journal of the Royal United Service Institution; Mark Lane Express; Lancet; Echo Veterinaire; Recueil de Médécine Vétérinaire; British Medical Journal; Revue Vétérinaire; Deutsche Zeitschrift für Thiermedicin und Vergleichunde Pathologie; Frie Bühne; Farrier.*

NEWSPAPERS: *Irish Times; Baltimore Sun; Cheshire City News; Toronto Daily Mail; Halifax Mercury; Insurance Record; Weekly Free Press, and Aberdeen Herald.*